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A Comparative Analysis of Elementary Education Preservice and Novice Teachers' Perceptions of Preparedness and Teacher Efficacy

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A COMPARATIVE ANALYSIS OF ELEMENTARY EDUCATION PRESERVICE AND NOVICE TEACHERS' PERCEPTIONS OF PREPAREDNESS AND TEACHER EFFICACY

by

Sarah Kartchner Clark

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of

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ABSTRACT

A Comparative Analysis of Elementary Education Preservice
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by

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The focus of this study was threefold. First, the study sought to determine the validity and reliability of an instrument being used to measure teacher efficacy. After psychometric analysis, the Utah Teacher Efficacy Scale (UTES) was deemed as both a valid and reliable instrument for the purpose of measuring preservice and novice elementary school teacher efficacy.

Second, this study analyzed teacher self-efficacy of preservice and novice elementary school teachers at two different points in a time – once at the end of their teacher preparation program, and again after they had taught for one academic year. The sample (N = 123) for this study was created from graduates of teacher preparation programs throughout the state of Utah. A two-factor repeated measures ANOVA design was used to measure one between-subjects factor (Factor A) and one within-subjects

factor (Factor B). Factor A involved a comparison between two independent groups of prospective teachers based on the type of student teaching assignment, number of student teaching placements, and the number of literacy methods courses completed. The two levels of Factor B consisted of two different UTES measurement occasions.

Results of this analysis indicated that preservice teachers in this study reported high teacher efficacy. As these individuals became teachers, their teacher efficacy fell, indicating there is room for improvement in presenting the realities of teaching. Additionally, teacher preparation program characteristics such as the type of student teaching experience (student teaching or internship), and the number of student teaching placements (one or two) do not seem to provide statistically significant advantages over time. The number of literacy methods courses, however, does seem to provide statistically significant advantages in securing and maintaining high teacher efficacy over time in the areas of global and reading teacher efficacy.

Third, the study also analyzed how school context variables affect teacher efficacy. Novice teachers (N = 136) were asked to rate the usefulness of professional development and the helpfulness of the mentoring support they received. Results of this analysis showed that professional development and mentoring support, if perceived as useful and helpful, had a positive and statistically significant correlation with teacher efficacy.

(194 pages)

DEDICATION

To my husband, Michael Andrew,

and daughters, Anne Elizabeth and Elise Irene.

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CHAPTER I

INTRODUCTION

The teacher is the greatest source of strength in a classroom – and the teacher can be its greatest weakness as well. The No Child Left Behind Act (2001) issued the challenge of requiring that all classrooms have a "highly qualified teacher." This is a daunting task given the fact that keeping newly trained teachers in the classroom is becoming increasingly difficult. Recent research states that one in five teachers leaves the profession during the first 3 years of teaching (Kauffman, Johnson, Kardos, Liu, & Peske, 2002; Olson, 2000). Watkins (2005) reported that 29% of all novice teachers leave the classroom within 3 years, and Ingersoll (2002) maintained that 39% of all novice teachers leave the profession within 5 years. These sobering statistics were greater in low-income schools. The teacher turnover rate in these schools is 50% higher than in higher-income schools (Ingersoll, 2001).

Even more concerning is the fact that teachers are leaving the profession faster than they can be replaced. Since the early 1990s, the number of teachers leaving the profession exceeded the number of new teachers entering the teaching field (Darling-Hammond, 2003). The need for teachers continues to increase (Kardos, Johnson, Peske, Kauffman, & Liu, 2001; Kauffman et al., 2002; Olson, 2000). Within the state where this study was based, a recent press release by Sperry (2007) from the Utah System of Higher Education reported the following:

> Efforts need to be made to reduce teacher attrition…that the number and percentage of teachers leaving after two (2) years of teaching has increased from 29.6% to 35 %. The number of teachers leaving after five (5) years increased from

47.4% to 55.4%. (p. 1-2)

According to national reports (National Center for Education Statistics, 2000), more than two million teachers will be needed over the next decade due to teacher attrition and retirement.

Teacher attrition is costly to the educational system as well. Conservative estimates place the cost of replacing public school teachers at $2.2 billion a year (National Center for Education Statistics, 2005). In Texas, teacher attrition costs the state at least $329 million a year, which divided out to approximately $8,000 per teacher who leaves within the first few years of teaching (Texas Center for Educational Research, 2000). Further costs include the professional support and training of beginning teachers, consuming valuable resources that are vitally needed in other areas of the school system and classroom (Carroll, Reichardt, & Guarino, 2000).

Though the costs of teacher attrition are financially great, the greatest costs are to the students in the classroom. With such high turnover, students are exposed to increasingly high numbers of novice and inexperienced teachers. Strickland, Snow, Griffin, Burns, and McNamara (2002) affirmed that teacher attrition has a concerning impact on student achievement. Hitz and Roper (1986) explained the problem:

> The risks are simply too great to allow a teacher to flounder for a few years hoping to learn many of the skills of teaching 'on the job.' One must remember that the people who suffer the most gaps in teacher training programs are the children that end up in these beginners' classrooms. (p. 70)

Teacher attrition is largely attributed to heavy workloads, student discipline problems, lack of influence on school policy, little support from administration, and low compensation (Ganser, 2002; Wang & Odell, 2002). Strickland et al. (2002) asserted that

another reason qualified teachers leave is that they progress on the teacher career path by becoming principals, curriculum supervisors, superintendents, or counselors, leaving their positions open for new, inexperienced teachers. Although these reasons for teacher attrition are compelling, recent examinations of the way teachers are trained is receiving greater attention. Studies demonstrate that the more unprepared teachers are, the more likely they are to leave the profession (Darling-Hammond, 2003; Veenman, 1984.)

In 1996, the National Commission on Teaching and America's Future (NCTAF) report entitled *What Matters Most* pointed out the disintegration of teacher preparation programs and highlighted the perpetual problems that plague teacher education programs by stating that "Key elements of teacher learning are disconnected from each other. Coursework is separate from practice teaching; professional skills are segmented into separate courses; faculties in the arts and sciences are insulated from education professors. Would be teachers are left to their own devices to put it all together" (p. 32). Recommendations from this report called for the restructuring of teacher education programs.

In 1987, Shulman maintained that there is an expert teacher knowledge base that all preservice teachers must acquire. He explained the following:

> The goal of teacher education is not to indoctrinate or train teachers to behave in prescribed ways, but to educate teachers to reason soundly about their teaching as well as to perform skillfully. Teaching is both effective and normative; it is concerned with both means and ends. Processes of reasoning underlie both. The knowledge base must therefore deal with the purposes of education as well as the methods and strategies of teaching. (p. 13)

The report issued by the NCTAF (1996) stated, "Teacher expertise is the single most important factor in determining student achievement and…fully trained teachers are

far more effective with students than those who are not prepared" (p. 12). Strickland et al. (2002) further explained that "…teaching, even in this technical and complex age, remains essentially a human operation. Every parent wants the best for each child. We need more quality to go around. We need more quality teachers to stay around" (p. 4).

Anders, Hoffman, and Duffy (2000) reviewed recent research on teacher preparation programs. They noted that the number of studies analyzing teacher preparation programs has increased over the past 30 years, but that "we have continued to struggle with conceptions of teacher knowledge, beliefs, attitudes, and habits – how they are formed, how they are affected by programs, and how they impact development over time." Anders et al. concluded that "more longitudinal studies of program effectiveness" (p. 278) are needed in order for teacher preparation programs to better prepare preservice teachers and ultimately improve student achievement. Cruickshank and Metcalf (1990) explained it this way:

> Literature on the conduct, objectives, and the effectiveness of training in teacher education is sparse…. Given the historic brouhaha over training in teacher preparation, it would be expected that a considerable available related literature would exist. Such is not the case. (p. 491)

Candidates of teacher preparation programs today are expected to perform at higher levels of mastery than ever before. Preservice teachers are expected to perform responsibilities that were previously held by experts and specialists (Darling-Hammond & Cobb, 1996). Teacher preparation programs require coursework in pedagogical theory and methodology, assessment, technology, diversity, multiple literacy-related courses, as well as practicum and clinical experiences. Greater demands have been placed on the teacher in the form of mounting legislation and increasing high-stakes assessment.

Teacher education programs are often blamed for the fact that many teachers are under prepared for their roles. There is a strong need to study the perceptions and efficacy of novice teachers to determine if their preparation is adequate for the demands and challenges of teaching in the classroom today.

The National Reading Panel (2000) concluded "…that appropriate teacher education does produce higher achievement in students." The same report also concluded the following:

> The panel found no instances of research in the pool that continued with preservice teachers as they moved into full-time teaching positions. There is no inherent reason why this is the case. The reasons seem, instead, to be pragmatic and related to the complexities of research that would be introduced in attempting to follow teachers into full-time teaching. (p. 389)

In 1986, Lanier and Little observed that "teacher education is practically everyone's, and yet no one's, obvious responsibility or priority" (p. 529). The National Council for Accreditation of Teacher Education, the organization responsible for accrediting teacher preparation programs, requires teacher preparation programs to provide evidence of their established outcomes and how they measure up to accreditation standards. In an attempt to address the increasing political debates surrounding teacher preparation programs regarding their utility and legitimacy, teacher preparation programs are seeking to answer the questions circulating about whether teacher preparation programs really influence teacher effectiveness and produce teachers that have the ability to increase student learning in measurable ways (Darling-Hammond, 2006).

One way to improve teacher preparation programs, and ultimately student achievement, is to talk to teachers about their preparation and incorporate their insights,

visions, experiences, and suggestions in the planning and implementation of teacher preparation programs (Forsyth & Tallerico, 1998). According to the Council for Basic Education (1996), teachers are infrequently asked about their opinions on preparedness for the teaching profession. This study sought to discover the perceptions and opinions of preparedness and efficacy of preservice teachers and then to ask these same individuals when they were novice teachers concerning their feelings of efficacy in order to improve teacher preparation programs and ultimately student achievement.

Purpose of the Study

Given the number of teacher preparation programs nationwide, it is surprising that limited numbers of longitudinal studies (tracking preservice teachers as they move into full-time teaching positions) have been conducted to determine the perceptions of preservice as well as novice teachers regarding their teacher preparation programs and their feelings of self-efficacy and preparedness to teach in the classroom. Only one of the studies located in the review of literature analyzed the same preservice teachers from one institution after one full year of teaching. Consequently, further research is needed to examine the perceptions of preservice teachers regarding their teacher education program, and the perceptions of these same teachers once they have taught a year in the classroom. Furthermore, none of these studies looked at preservice teachers across teacher preparation programs and schools. Accordingly, a better understanding of how preservice and inservice teachers perceive their teacher preparation program, their feelings of self-efficacy, and preparedness to teach across teacher preparation programs

and schools is needed to determine methods to improve the quality of teacher preparation generally.

Research Questions

This study addressed the following questions.

1. How do preservice teachers rate their teacher preparation program and their feelings of preparedness and teacher self-efficacy?
2. What teacher preparation program variables are associated with these perceptions of preservice teacher self-efficacy?
3. How do these same individuals rate their teacher preparation program and their feelings of preparedness and teacher self-efficacy after their first year of teaching?
4. What school context variables are associated with these perceptions of inservice teacher self-efficacy?
5. In what ways do perceptions of preservice teachers change after a year of teaching?

Definition of Terms

For the purpose of this study, the following terms and definitions were used.

Candidate: An undergraduate enrolled in a teacher preparation program. Other descriptions include elementary education student or preservice teacher.

Cooperating teacher: The inservice classroom teacher who is assigned to work with a student teacher. The cooperating teacher trains, teaches, and shares his/her classroom with the student teacher during the student teaching period.

Coursework: The foundation courses and methods courses provided by faculty at the university with the intent and purpose of training preservice teachers.

Inservice teacher: A teacher currently teaching in an elementary school classroom.

Internship: A student teaching experience that extends beyond the framework, format, and time of traditional student teaching placements. Typically a teacher candidate is interviewed and selected to participate in an internship. A student serving in an internship is given a class to teach on their own. They are provided with a mentor teacher that teaches in the same school and typically the same grade level, but the mentor teacher does not teach with the intern as a cooperating teacher does in a traditional student teaching placement. The intern is also provided a university supervisor for feedback and support. The intern assumes full responsibility for the classroom just like a new teacher. Once the intern has completed the semester of student teaching, he/she will continue teaching for the remainder of the school year in this same classroom as a novice teacher.

Mentor teacher: Once a novice teacher has been hired to work in a school, this novice teacher is usually assigned or provided with an experienced teacher, known as a mentor teacher. The mentor teacher typically has experience teaching at the same grade level as the novice teacher and serves as the mentor for the novice teacher. The mentor teacher may provide lesson plan ideas, feedback, encouragement, or various other types of support to help the novice teacher navigate the first year and have a successful school year.

Mentoring: This includes the induction, support, and training new teachers receive

after being hired by a school district. Mentoring support can take place at the local school or district level. Each novice teacher is usually provided with a mentor or experienced teacher that teaches at the same grade level and in the same school.

Methods course: A class that prepares teacher candidates on how to teach academic subjects taught in elementary school. Methods courses typically involve teacher candidates learning how to teach reading, mathematics, social studies, science, and language arts.

No Child Left Behind: A federal mandate, often known as "NCLB," that seeks to improve student achievement, close the achievement gap, and ensure teacher quality.

Novice teacher: A brand new teacher that has recently graduated from a teacher preparation program and has taught for less than one year in the classroom.

Practicum or field experience: An "in-school" experience for preservice teachers. This is a time during the teacher preparation program that teacher candidates have opportunities to be in an elementary school classroom. Teacher candidates observe teachers, work with small groups, present lessons, and perform assessments. The practicum or field experience is designed to provide teacher candidates with more time and experience in the classroom before the student teaching experience. Field experiences and practicum experiences are varied and typically happen away from the university campus, unless an institution has a laboratory school.

Preservice teacher: An individual who is enrolled and participating in a teacher preparation program. This individual is a candidate of a teacher preparation program.

Professional development: This is the training and instruction inservice teachers

receive while employed as a teacher. Professional development experiences may include attendance at workshops, training from the principal, and planning and working with a team of teachers, reading coach, or other individuals.

Program variables: Characteristics that are unique to the teacher preparation program that preservice teachers attend. Examples of program variables include type of student teaching placement, coursework, practicum/field work experience, and duration of student teaching experience.

Student teaching or clinical practice: An intensive culminating experience where teacher candidates spend full time working with a cooperating teacher in an elementary classroom. The student teacher gradually assumes full responsibility for the classroom receiving feedback, mentoring, and ongoing training from the cooperating teacher and the university supervisor.

Student teaching placement: An assignment for preservice teachers to teach in a classroom. When preservice teachers have completed their teacher training at a teacher preparation program, they are assigned to student teach in a classroom. This is called a student teaching placement. Some students have one placement while others have more than one student teaching placement during the semester. Students with two placements often spend one placement in a primary grade classroom and the other placement in an intermediate grade classroom.

Teacher preparation program: A college or university program whose intent and purpose is to train and prepare teachers to teach in elementary classrooms. This may also be known as a teacher education program.

Teacher efficacy: The self-beliefs teachers possess enabling them to exercise a measure of control over their thoughts, feelings, and actions in the classroom (Bandura, 1997).

University supervisor: An individual assigned to the student teacher. The university supervisor serves as the liaison for the university, cooperating teacher, and the student teacher. The supervisor works with the student teacher providing feedback, supervision, and instruction.

CHAPTER II

REVIEW OF LITERATURE

This literature review chapter consists of two sections. The first section will begin with a literature review of the research studies that have been done on preservice and novice teachers' perceptions of their preparedness and self-efficacy to teach. The second section will include an analysis of the literature in relation to the social cognition theory, upon which this research is based.

Research Studies

In the Report of the AERA Panel on Research and Teacher Education, Zeichner and Conklin (2005) conducted a literature review of teacher education. Zeichner and Conklin analyzed 38 empirical research studies relating to teacher education with nine of these studies specifically addressing the perceptions of preservice and novice teachers of their teacher preparation program. This literature review had multiple strengths. The purpose of the review was clearly stated, review questions and methods were included, and the review conclusions were informative and instructive. Additionally, the inclusion/exclusion criteria required that studies show quantifiable evidence of a connection of teachers' perceptions of the teacher education program to a sense of preparedness or teacher self-efficacy.

This literature review supported the claim that teacher preparation programs can have a positive impact on novice teacher efficacy, confidence, and teacher preparedness. Since that time, there have been additional studies on this subject. An update of the

Zeichner and Conklin (2005) literature was needed as it presented only research studies that had been completed by the year 2002. The purpose of the current literature review was not only to update the review of Zeichner and Conklin, but to further investigate the relationship of teacher preparation and teacher self-efficacy in order to draw conclusions leading to future research.

Review Procedures

Databases used to identify literature for this review were accessed through the Utah State University Libraries including Education Full Text, ERIC via EBSCO Host, the Professional Development Collection, and Digital Dissertations. A computer search of post-2002 research was conducted, and seven studies were located that specifically studied the perceptions and efficacy of preservice and inservice teachers relating to their teacher preparation programs. Key terms used for the databases were teacher preparedness, perceptions of preservice teachers, perceptions of inservice teachers, preparing high quality teachers, assessing teacher education, self-efficacy, and teacher efficacy. Inclusion and exclusion criteria included the following:

1. Studies were either peer reviewed or dissertations.
2. Studies provided adequate descriptions of data collection and data analysis methods.
3. Studies took place in the United States.
4. Articles were published between 2002 and 2008.
5. Subjects/participants were preservice and/or novice teachers having taught no more than three years.

6. Studies contained all or some participants who were Elementary Education preservice and novice teachers.

7. The dependent variable had to be some measure of preservice and/or inservice teachers' perceptions or feelings of preparedness or teacher self-efficacy based on experiences in teacher preparation program and/or classroom teaching experience.

The studies were synthesized using a systematic approach to reveal patterns among key features that were likely to influence the author's conclusions of the outcome of each study. These features included the following: research question(s), research design, sample characteristics, program characteristics, and findings. The results of this analysis are listed in Table 1 and discussed below.

Study Characteristics

Research question(s). The 10 studies included in this literature review have similar research questions relating to preservice and novice teachers' perceptions of preparedness or feelings of efficacy. However, each study approached the topic from a different angle. As indicated below, six of the studies focused on teacher self-efficacy and how it changes over time. Carter (2006) measured teacher self-efficacy before and after the student teaching experience. This study also looked at how the perceptions of the teacher self-efficacy of their mentor changed during the student teaching experience. Woolfolk Hoy and Burke Spero (2005) focused on the changes in efficacy during student teaching and looked at whether different efficacy measures revealed patterns of change. A final question in this study sought to determine whether there were factors during the

Table 1

Analysis of Studies

Study	Research question(s)	Research design	Sample characteristics	Program characteristics	Findings
Carter (2006)	Is there significant change in student teachers' self-efficacy beliefs after student teaching? Is there a positive relationship between the post student teaching self-efficacy beliefs of student teachers and perceived beliefs of mentor teachers?	Survey: Teacher Self-Efficacy Scale Survey administered prior to and at the end of student teaching	*N* = 100 (40% of Elementary Education preservice teachers, and 18% were Secondary Education majors) 90% female, 10% male; 79% Caucasian, 14% Hispanic, 4% Other, 2% Native American, 1% African American	Participants enrolled in teacher education program at a Southwestern university.	Teaching self-efficacy increased during student teaching experience. A significant positive correlation was found between student teachers' self-efficacy beliefs and the efficacy of their mentor teacher as perceived by student teacher.
Darling-Hammond, (2006)	How do teachers/graduates of the program rate the effectiveness of teacher education program?	Multiple methods: Survey, interviews, pre/posttests of teaching knowledge, student student samples, and observations	*N* = 100 (75 secondary, 25 elementary graduates each year)	Stanford Teacher Education Program (STEP) 12-month postgraduate program month postgraduate program includes year-long clinical.	Eighty percent of the participants felt prepared to teach and rated the program as prepared to teach and rated the program as effective.
	What relations exist among	Survey/ Questionnaire:	*N* = 49 student teachers; 90%	All participants were attending	Findings indicate that a

(table continues)

Study	Research question(s)	Research design	Sample characteristics	Program attributes	Findings
Fives, Hamman, & Olivarez (2007)	student teachers efficacy beliefs, reports of burnout, and perceived support from university supervisor and cooperating teacher? Do student teachers' reports of efficacy, burnout, and support change over the course of student teaching? What differences do student teachers, reporting varying levels of cooperating teacher support demonstrate with respect to efficacy, burnout, and supervisor support?	Four instruments used to measure efficacy (Teacher Sense of Efficacy Scale, Maslach Burnout Inventory, Learning to Teach Questionnaire, and Learning Climate Questionnaire)	females; 88% European American, 8% Hispanic, 2% African American, 2% Other; 60% in elementary classrooms, 40% in secondary classrooms; 51% had one student teaching placement while 49% had two student teaching placements	a university in southwest United States. Minimal information about program description provided. Each participant participated in one or two student teaching placements. Data was gathered twice during student teaching practicum.	significant relationship exists among efficacy and burnout factors. As student teachers' efficacy increases, burnout decreases. Significant changes occurred over time in perceptions of efficacy, burnout, and perceived levels of support. The degree and type of support student teachers received influenced efficacy for instructional practices.
Helfrich (2007)	Are there differences in knowledge of literacy instruction and assessment between candidates from two	Multiple Methods: Knowledge inventory, survey of perceptions, follow-up survey of perceptions,	*N* = 103 Master of Arts in Teaching (MAT) Program n = 53, 90% Caucasian, 8% African	MAT = 12-month program; initial certification in ELED and Master's Degree; graduate –level coursework	No significant differences between candidates on *Knowledge Inventory*. MAT candidates

(table continues)

Study	Research question(s)	Research design	Sample characteristics	Program characteristics	Findings
	teacher education programs? What differences exist in the perceptions of teacher candidates in the two programs? How do these perceptions change after three months of teaching full time?	telephone interviews, faculty and staff interviews	American, 2% Hispanic, and 5% Asian American; Professional Year (PY) Program n=50, 93% Caucasian, 2% Hispanic	with field placement and stipend PY = August – April program consisting of two academic terms; initial certification in ELED; field placement; no stipend	perceived themselves as more prepared to teach across all areas. PY candidates felt more prepared to teach in the area of phonics. Both groups (MAT N = 12, PY N = 8) perceived themselves as less prepared to teach reading than they did as preservice teachers.
Knoblauch & Woolfolk Hoy (2008)	Did student teachers' sense of efficacy change following student teaching experiences based on their school setting (rural, urban, suburban)? In addition, were there any factors (such as the schools' collective teacher efficacy and the cooperating teacher sense of efficacy) that were	Survey: Three instruments used to measure efficacy (Teacher Sense of Efficacy Scale, Collective Efficacy Scale, Perceived Cooperating Teachers' Efficacy Scale)	*N* = 102 preservice student teachers; 85% females; 15% males; 100 White,2 Other; 27 teaching elementary school, 75 teaching secondary.	All participants were attending a mid-sized university in the Midwest. Minimal information about program description provided. Participants were approached during student teaching orientation meeting. Each participant participated in a student teaching placement that lasted sixteen weeks.	Student teachers' efficacy beliefs changed. All three groups (rural, urban, and suburban) experienced a significant increase in efficacy scores following student teaching. Perceived cooperating teachers' efficacy was a significant predictor of student teachers' efficacy. School

(table continues)

Study	Research question(s)	Research design	Sample characteristics	Program characteristics	Findings
	predictive of student teachers' sense of efficacy following the student teaching experience?				setting was a factor as urban teachers displayed significantly lower perceived efficacy.
Pettway (2005)	To what degree are novice teachers satisfied with abilities to demonstrate content, pedagogical, and professional knowledge necessary to help all students learn? To what degree are novice teachers satisfied with their field experiences and clinical experiences?	Survey: 4-point Likert scale with some open-ended questions	*N* = 608 Elementary, junior high, and high school novice teachers; 65% attended primarily white institutions, 35% attended historically black institutions	All novice teachers were teaching in school districts during the 2004-2005 school year.	Teachers were overall satisfied with their teacher education program – 77% would teach again. Students from primarily Black institutions were more satisfied with skills and abilities. No statistical differences between teachers of alternative and traditional certification. Novice teachers felt they needed more training in diversity, technology, and classroom management.
Schlette (2006)	How do preservice teachers' perceptions of what teaching	Likert-Survey: 5-point Likert-scale of preservice teachers'	*N* = 23 Elementary Education preservice teachers at	Preservice teachers enrolled in methods and practicum	Overall, there were few significant findings. Interesting

(table continues)

Study	Research question(s)	Research design	Sample characteristics	Program characteristics	Findings
	will be like differ from new teachers' descriptions of their first year teaching? What significant differences exist between the way preservice and novice teachers describe the teaching career?	perceptions; survey of beginning teachers' perceptions	Midwestern state university *N* = 95 Elementary novice school teachers	course lasting 16 weeks Recent graduates or teachers in same geographic region as university in study Beginning teachers participated in New Teacher Induction Program sponsored by participating university	findings include: Preservice teachers rated their abilities to have impact on student learning and workload expectation as low but opportunity to participate in school-decision making as high. Novice teachers rated just the opposite on these items.
Shaw, Dvorak, & Bates (2007)	What beliefs about literacy instruction do preservice teachers have at the beginning of the semester? Do these beliefs change over semester? To what degree does self-efficacy of undergraduates in a literacy methods class change over semester? What knowledge do preservice	Survey and Assessment: Theoretical Orientation to Reading Profile, the Teacher Self Efficacy Literacy Scale, questionnaire	*N* = 52 preservice elementary school teachers; 47 females, 5 males; all but one were white-European; 49 were 22-23 years old and three non-traditional students were 25-26 years old	All participants attended a large Midwestern research university and were enrolled in a class entitled "Teaching Reading Methods."	Preservice teachers possess weak knowledge about word recognition. Participants had fairly high self-efficacy and yet it increased by end of course. Positive changes in preservice knowledge included alphabet, letter-sound, phonemic awareness, and direct instruction.

(table continues)

Study	Research question(s)	Research design	Sample characteristics	Program characteristics	Findings
	teachers possess about reading development/strategies that changes after instruction? Do teacher candidates utilize in personal reading practices same strategies as those taught?				No. There were differences between personal and instructional strategies.
Woolfolk Hoy & Burke Spero (2005)	How does sense of self-efficacy change during student teaching? What factors in the first year of teaching relate to efficacy changes? Do different measures of teachers' self-efficacy reveal similar patterns of change?	Survey: Three instruments used to measure self-efficacy	*N* = 53 Elementary Education preservice teachers; 72% female, 28% male *N* = 29 Elementary novice teachers who returned additional survey as novice teacher	Based on Holmes Professional Development School Model Master's of Education program Classes taken as cohort Students were in school placements for a year	According to three measures, efficacy rose during teacher preparation and student teaching, but fell during actual teaching experience. With OSU measure, efficacy rose and held. Teachers reporting high teacher efficacy also perceived their level of support as high. Yes. All measures correlated together and revealed similar patterns of change.

(table continues)

Study	Research question(s)	Research design	Sample characteristics	Program characteristics	Findings
Zientek (2007)	Do novice teachers differ by certification route in their sense of self-efficacy, perceptions of preparedness to teach, mentoring experience, reasons for entering/staying in profession, and classroom preparation? Are alternative route certification programs diversifying teacher population? Does overall preparedness depend on age and prior career experiences?	Survey: Three-part survey using 6-point Likert scale	*N* = 1197 novice teachers; 80% females; 64% Caucasian, 26% Hispanic, 5% African American; 72% 35 years old or younger	Alternative Teaching Certification Program vs. Traditional Teaching Certification Program	Findings show that traditional preparation programs appear to produce teachers with high sense of self-efficacy. Traditionally certified teachers felt better prepared than non-traditional routes, though mentoring programs and other experiences may have diminished these differences.

first year of teaching that related to these changes in efficacy.

Fives et al. (2007) measured the efficacy, burnout, and support of student teachers over time as well as the relationships among efficacy beliefs, reports of burnout, and perceived support from the university and cooperating teacher. They further sought to understand the differences between student teachers who report varying levels of cooperating teacher support. Knoblauch and Woolfolk Hoy (2008) measured the change of efficacy after student teaching in relationship to the school setting (rural, urban, or

suburban) in which they were placed. Knoblauch and Woolfolk Hoy also sought to determine the factors that were predictive of student teachers' sense of efficacy. Shaw et al. (2007) measured the beliefs preservice teachers have at the beginning of the semester and if and how changes occurred over the course of the semester. They also sought to determine what knowledge preservice teachers possess about reading development and instructional strategies and if these changed after instruction. Finally, Helfrich (2007) looked at the knowledge base of preservice teachers, measured their perceptions of confidence to teach reading, and then measured these same participants again after teaching fulltime for three months.

The remaining four studies focused on the perceptions of preservice and primarily novice teachers regarding their teacher education program and their abilities to teach. Pettway (2005) researched the degree to which novice teachers are satisfied with their abilities to demonstrate content, pedagogical, and professional knowledge needed to help all students. An additional question asked novice teachers about their satisfaction with their field and clinical experiences.

Schlette (2006) researched how preservice teachers perceive the teaching career and how novice teachers describe their first year of teaching. Additional questions asked if preservice teachers' perceptions of what teaching would be like differed from new teachers' descriptions of their first year, and whether there were significant differences between the way preservice and beginning teachers describe their impressions of teaching.

Zientek (2007) completed a replication of the Darling-Hammond (2002) study.

Zientek compared the differences between novice teachers of traditional and alternative certification programs. This study analyzed teacher's perceptions of their preparedness based on their certification route. Other research questions included whether novice teachers differed in mentoring experiences, reasons for staying or entering the profession, and classroom education based on the type of certification they received. A final question in this study inquired about whether age or prior experiences affected feelings of overall preparedness.

The final study by Darling-Hammond (2006) was comprehensive and analyzed multiple measures used to assess the effectiveness of teacher education programs. A variety of questions were addressed focusing specifically on how prepared candidates of the teacher education program felt, how they performed in the program, and how they performed as teachers in the classroom.

Research design. All studies used teacher education programs and classroom experiences as the independent variable, with perceptions of preparedness and responses to feelings of teacher self-efficacy as the dependent variable. None of the studies employed any sort of methodology that compared groups of preservice and novice teachers with an experimental design. Thus, it is impossible to draw any strong causal comparative conclusions from the available literature about the effectiveness of a teacher education program and its effect on teaching ability or student achievement.

Of the 10 studies located that address the preservice and/or novice teacher perceptions and feelings of efficacy regarding their teacher education program and their preparedness to teach, six of the studies used a quantitative research design based on

survey analysis (Carter, 2006; Fives et al., 2007; Knoblauch & Woolfolk Hoy, 2008; Schlette, 2006; Woolfolk Hoy & Burke Spero, 2005; Zientek, 2007). Carter administered the Teacher Self-Efficacy Scale to 100 students at the beginning of student teaching and at the completion of their student teaching experience.

Woolfolk Hoy and Burke Spero (2005) administered three instruments to measure self-efficacy. The first was the Teacher Efficacy Scale (Gibson & Dembo, 1984) adapted by Woolfolk and Hoy (1990). This 10-item scale analyzed personal teaching efficacy as well as general teaching efficacy. The second instrument was the Bandura Teacher Self-Efficacy Scale. This 30-item scale, with seven subscales, measures included items such as efficacy to influence school resources, instructional efficacy, and disciplinary efficacy. The final instrument was a program-specific measure of efficacy entitled The OSU Teaching Confidence Scale, which portrayed how confident the teachers felt in their ability to accomplish specified skills.

Knoblauch and Woolfolk Hoy (2008) administered three instruments. These included the Teacher Sense of Efficacy Scale, designed by Tschannen-Moran and Woolfolk Hoy (2001), which was completed by participants at three separate times: before student teaching, at the 8-week point, and after student teaching. The Collective Efficacy Scale created by Goddard (2002) included group competence items and task analysis items. Responses were on a 6-point Likert scale and participants were administered the Collective Efficacy Scale at 8 weeks and at the end of the semester. The Perceived Cooperating Teachers' Efficacy Scale was designed by Li and Zhang (2000) and was used to measure the student teachers' perceptions of the efficacy beliefs

held by their cooperating teachers.

Schlette (2006) administered two surveys created by the researcher. The first was entitled the Survey of Preservice Teachers' Perceptions while the other was entitled Survey of Beginning Teachers' Perceptions. The items on the surveys studied both what preservice teachers expect to experience and what novice teachers actually experience. Fives et al. (2007) administered the Teacher Sense of Efficacy Scale, the Maslach Burnout Inventory, the Learning to Teach Questionnaire (Hamman & Olivarez, 2005), and the Learning Climate Questionnaire (Deci & Ryan, 2002). On all of these measures, participants were asked to respond using Likert scales. Zientek's (2007) replication incorporated a three-part survey using a 6-point Likert scale to determine differences between perceptions of teachers that were certified through traditional certification programs and the those that were certified through alternative route certification programs.

The remaining four studies used a mixed-methods approach. Pettway (2005) administered a survey using a 4-point Likert scale that included some open-ended questions at the end to measure the satisfaction that novice teachers have in their teacher education experiences. Helfrich (2007) used a knowledge inventory of teacher candidates, a survey of perceptions, a follow-up survey of perceptions, telephone interviews of novice teachers, and faculty and staff interviews.

Shaw et al. (2007) used the Theoretical Orientation to Reading Profile (DeFord, 1985), and the Teacher Self Efficacy Literacy Scale (Johnson & Tschannen-Moran, 2003) for quantitative measures. An instructor-made questionnaire constituted the

qualitative measures used in this study. Darling-Hammond (2006) utilized multiple measures to assess the effectiveness of the teacher education program. First, surveys were administered to preservice teachers to determine their perceptions of preparedness. A companion survey was also administered to the principals rating the abilities of these new teachers. Interviews were used to triangulate the data. Graduates of the program were asked about their teacher education, coursework, and field experiences. Pre/posttests assessing teacher knowledge were administered along with a collection of student work samples. Upon graduation, candidates were given the Performance Assessment for Classroom Teaching (PACT). The final measures used in this study were observations of graduates in their teaching practice.

The designs of these studies indicate a variety of measures, and formats can be incorporated to determine teacher perceptions and feelings. These studies also provide resources of instruments that have been used in previous research to assess teacher perceptions and efficacy, and some of them provide results of criterion-related concurrent validity evidence for the measures used.

Sample characteristics. The samples in each study differed in size, number of male and female participants, and number of individuals representing different racial and ethnic backgrounds. Three studies reported less than 100 participants in the sample. Woolfolk Hoy and Burke Spero (2005) reported 53 preservice teachers and 29 novice teachers; Fives et al. (2007) reported 49 student teachers; and Shaw et al. (2007) had 52 preservice teachers. Five studies reported around 100 participants. Schlette (2006) reported 23 preservice teachers and 95 novice teachers, and Helfrich (2007) reported 53

teacher candidates from one program with 50 candidates from a different program. Carter (2006) and Darling-Hammond (2006) both reported 100 participants. Knoblauch and Woolfolk Hoy (2008) reported 102 preservice student teachers. The remaining two studies had more than 500 participants each. Pettway (2005) reported 608 participants while Zientek (2007) reported 1,197 participants.

Six of the 10 studies reported the percentage of male and female participants included in the sample. The first study (Carter, 2006) had 90% female with 10% male. Woolfolk Hoy and Burke Spero (2005) had 72% female with 28% males; Zientek (2007) had 80% female with 20% male participants. Shaw et al. (2007) had 90% females and less than 1% males, with 9% unreported; Fives et al. (2007) had 90% females; and Knoblauch and Woolfolk Hoy (2008) had 85% females and 15% males. These numbers are not surprising given the fact that the elementary education teaching profession is predominantly made up of female teachers.

Five of the 10 studies reported representation of the different races. Carter (2006) reported 79% Caucasian, 14% Hispanic, 4% other, 2% Native American, and 1% African American. Zientek (2007) reported 64% Caucasian, 26% Hispanic, and 5% African American were reported. These numbers reflect a slightly lower percentage of White teachers than the 90% reported nationwide by the National Education Association in 2003. Helfrich (2007) reported that from the MAT program that there were 90% Caucasian; 8% African American, 2% Hispanic, and 5% Asian American. Helfrich reported that from the Professional Year program, there were 93% Caucasian and 2% Hispanic. Shaw et al. (2007) reported that all but one participant were white-European,

and Fives et al. (2007) reported 88% were European American, 8% Hispanic, 2% African American, and 2% listed as Other.

Program characteristics. The programs examined in all of the studies included both teacher education programs as well as classroom settings for novice teachers. Of the studies examining teacher education programs, only five studies included thorough descriptions of these programs. The remaining five studies providing limited descriptions were as follows: Carter (2006) listed only those participants enrolled in a teacher education program at a Southwestern university; Fives et al. (2007) reported only that participants were attending a university in southwest United States; Knoblauch and Woolfolk Hoy (2008) listed that their sample came from a mid-sized university in the Midwest; Shaw et al. (2007) reported that their sample of participants attended a large midwestern research university; Zientek (2007) reported that participants in the study varied in their teacher certification program from traditional to alternative teacher certification routes.

Five studies gave a more thorough description of the teacher education program being examined. Woolfolk Hoy and Burke Spero (2005) reported that participants were in a Master's of Education initial teaching certification program that was based on the Holmes Group Professional Development School model. All students began the program with an undergraduate degree and completed a Master's degree in five quarters. Students were grouped as cohorts and were in yearlong school placements building up to ten weeks of fulltime student teaching. The program emphasis was on diversity and preparing teachers to teach in an urban setting.

Helfrich's (2007) study compared two programs at the University of Pittsburgh. The Master of Arts in Teaching (MAT) program included initial certification in elementary education and a master's degree. It was a 12-month program. Students took graduate-level coursework and participated in a field placement. Students received a stipend for their work in the fieldwork placement. The other program was known as the Professional Year (PY). Students in this program received initial certification in elementary education. The program took place over two academic terms from August to April. Students participated in a field placement but received no stipend. Students from both programs were enrolled in literacy courses with the same name but experienced different delivery methods.

Schlette's (2006) study included both preservice and novice teachers and so the program characteristics of both the teacher education program as well as the school systems were briefly described. This sample of preservice teachers was collected from a population of students enrolled in one of two sections of a course entitled "Elementary Integrated Methods and Practicum" during the Spring 2006 semester at a midwestern state university. This was the students' last class prior to student teaching. The beginning teachers in the study were recent graduates or taught in the same geographic region as this university. All of these novice teachers were enrolled in an induction program sponsored by this same university.

The program analyzed in Darling-Hammond's (2006) study was entitled the Stanford Teacher Education Program (STEP), which features a 12-month postgraduate program offering a master's degree, and a California teaching credential. This program

included a yearlong clinical experience running parallel to the coursework. The conceptual framework of the program is grounded in the concept that teachers are reflective practitioners and decision makers that are continually progressing and developing. Teacher candidates are grouped in cohorts with exposure to a curriculum that integrates theory and practice.

The final study by Pettway (2005) did not collect a sample from a teacher education program but rather from a group of novice teachers dispersed throughout three separate school systems. These three school systems were selected because of their diverse teaching faculty in terms of ethnicity, grade levels and subject areas taught, years of teaching experience, types of certification pursued, and types of institutions attended. The student population in these participating public schools systems was also considered diverse.

In summary, this analysis emphasizes the importance of providing a thorough program description in future studies. In order to understand more fully what makes a teacher feel more prepared or have a high sense of efficacy, clear and specific information about the curriculum, faculty, clinical experiences, and supervisory practices of a teacher education program is desperately needed in order to determine what creates high efficacy or confidence in a teacher. This is especially important when trying to tease out the differences between what the teacher education program and the school setting provides.

Findings. Generally, most of the studies provided some empirical support for the claim that preservice and novice teachers' perceptions regarding their teacher education

program and/or their personal feelings of their preparedness to teach are generally satisfactory. Darling-Hammond (2006) concluded that 80% of the graduates from the teacher education program felt adequately prepared to teach.

Helfrich (2007) concluded that there were no significant differences between MAT and PY candidates on the *Knowledge Inventory*, which was used to assess both specific and general knowledge and skills about early reading instruction. However, there were differences in perceptions between the two groups of graduates on the *Survey of Perceptions*. After three months of teaching, MAT candidates perceived themselves as more prepared to teach reading across all areas. PY candidates felt more prepared to teach in the specific area of phonics.

Pettway (2005) found that overall the teachers were satisfied with their teacher education program. Of these teachers, 77% reported they would teach again. Students from Black institutions were more satisfied with their skills and abilities than those from White institutions. No statistical differences between teachers of alternative and traditional certification routes were reported. Novice teachers did report the need for more training in diversity, technology, and effective classroom management.

Schlette (2006) found that preservice teachers rated their abilities to have an impact on student learning and workplace expectations as low, but they rated opportunities they would have in school-decision making as high. Novice teachers rated these items in the opposite direction. Novice teachers rated their abilities to have an impact on student learning and workplace expectations as high, but they rated the opportunities they would have in school-decision making as low.

Zientek (2007) found that traditional teacher education programs appear to produce teachers with a higher sense of self-efficacy. Traditionally certified teachers felt better prepared to teach than those who pursued nontraditional routes, though mentoring programs and other experiences may have diminished these differences.

The five studies examining teacher self-efficacy indicated that self-efficacy, or perceptions of self-confidence, increased after the completion of student teaching. Carter (2006) reported a significant positive correlation between student teachers' efficacy beliefs and students teachers' perceived teaching self-efficacy beliefs of their mentor teacher. Woolfolk Hoy and Burke Spero (2005) reported that on three of the measures used, efficacy or perception of self-confidence rose during the teacher education program and student teaching, but fell with actual teaching experience. The final measure used in the study indicated that confidence rose during student teaching and teacher preparation and held after one year of teaching.

Fives et al. (2007) found that a significant relationship exists among efficacy and burnout factors. As teachers' efficacy increased, their degree of burnout decreased. They also found that significant changes occurred over time in the student teachers' perceptions of efficacy, burnout, and perceived levels of support. The type and degree of support that student teachers received influenced the efficacy towards instructional practices. Knoblauch and Woolfolk Hoy (2008) found the efficacy of student teachers changed. All three groups of student (rural, urban, and suburban) school settings experienced a significant increase in efficacy scores following their student teaching experience. It was also determined that perceived cooperating teachers' efficacy was a

significant predictor of student teachers' efficacy. School setting was also a factor as urban teachers displayed significantly lower perceived efficacy.

Finally, Shaw et al. (2007) found that preservice teachers possess weak knowledge about word recognition. Participants in their study had fairly high self-efficacy scores and yet these efficacy scores continued to increase throughout the course. Positive changes in preservice knowledge were found in alphabet knowledge, letter-sound knowledge, phonemic awareness knowledge, and direct instruction knowledge. It was also determined that teacher candidates do not utilize the same strategies in their personal reading that they instruct children to use in their reading.

Summary

After updating the literature review done by Zeichner and Conklin (2005), findings suggested that there was empirical support for the claim that preservice teachers who have positive perceptions of their teacher education programs became novice teachers with high teacher efficacy. Clearly lacking in this current collection of literature were enough longitudinal studies that considered the perceptions of preservice teachers at two points in time, once at the end of the teacher preparation program and then again after these graduates have taught in the classroom for one year. The two studies that tracked preservice teachers to novice teachers (Helfrich, 2007; Woolfolk Hoy & Burke Spero, 2005) collected data at two different points. Helfrich collected data at the end of teaching three months and Woolfolk Hoy and Burke Spero collected data at the end of one full year of teaching. Both of these studies had low sample sizes for the novice teachers. Helfrich had 20 total participants and Woolfolk Hoy and Burke Spero had 29

participants.

Understanding more about how teacher perceptions and feelings of efficacy change from the preservice stage to the inservice stage and understanding how program variables factor into these perceptions will add additional insight to current studies. Given these findings, further research is needed that tracks the perceptions and feelings of preservice teachers as they become novice teachers and how program variables and experiences affect confidence and teacher efficacy. A study is also needed that increases the sample size of preservice teachers being studied and tracked into classroom.

Secondly, noticeably absent from this collection are studies that look across institutions and teacher preparation programs to compare and contrast the differences in these programs and eventually their graduates. Zeichner and Conklin (2005) recommended further study of the differences between the teacher education programs is needed to identify and determine how these differences affect the perceptions and the teacher self-efficacy of preservice and novice teachers.

Theoretical Framework

Bandura's (1977) theory of social cognition provides a meaningful theoretical framework for analyzing teacher education graduates and their programs. Self-efficacy is the foundation of the social cognition theory (Pajares, 1992). Self-efficacy is the belief "in one's ability to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 2). Bandura (1977, 1997) further explained that self-efficacy was not based on one's actual ability to do something, but rather on one's

perception of ability to complete a task. Bandura (1997) stated that efficacy belief was perhaps the most powerful of all human characteristics concluding that, "Efficacy belief, therefore is a major basis of action" (p. 3). Our sense of efficacy influences how we think about ourselves and what we are capable of doing. Self-efficacy engages cognitive resources, motivational factors, as well as action to exercise control over specified events (Bandura, 1997).

Numerous studies on the construct of self-efficacy indicate that a person's self-efficacy influences the choices people make, how much effort they give to specific activities, and the perseverance they exert to accomplish tasks and activities. Bandura (2007) further explained that self-efficacy is "concerned not with what one has but with belief in what one can do with whatever resources one can muster" (p. 6). The greater resources and ability a teacher believes they have increases the chances for success they will experience. Pajares (2002) articulated the notion that self-efficacy drives the choices one makes and selects the tasks in which there is a strong feeling of competence. Bandura (1997) articulated four sources of self-efficacy beliefs. These sources include mastery experiences, vicarious experiences, verbal and social persuasion, and emotional and physiological states.

According to Usher and Pajares (2008), the value of a mastery experience comes from providing an opportunity for individuals to see themselves complete an experience successfully. Individuals can see the results of their actions. The student teaching experience or practicum/field work experiences preservice teachers have in a teacher preparation program can represent a mastery experience and can be the catalyst to higher

feelings of efficacy in the classroom. Teachers with a sense of high self-efficacy believe they can accomplish difficult goals and will therefore persevere to achieve them.

Examples of vicarious experiences include observing others (Usher & Pajares, 2008). Observing others can include practicing teachers, university faculty, and/or peers. Participating in vicarious experiences allows the preservice teacher to compare themselves to other preservice teachers. These social models play an important role. They can boost or undermine one's confidence to carry out a task. Eccles, Midgley, and Adler (1984) pointed out that models may play a more influential role during transitional periods. This might indeed be the case for student teachers preparing to take on a classroom of their own.

Usher and Pajares (2008) described verbal and social persuasion as the encouragement, positive feedback one receives while performing. This feedback can increase confidence in one's ability to perform. Preservice teachers crave feedback and reinforcement on their teaching skills. Ideally, they should receive multiple forms of feedback from course instructors, cooperating teachers, and university supervisors.

The fourth source of efficacy is emotional and physiological and is described by Usher and Pajares (2008) as the varying degree of feelings related to personal competence based on the differing conditions. A student teacher may feel less competent when the university supervisor is present, and more competent when there is a substitute in the classroom for a day. An increase in physical and emotional well being strengthens self-efficacy.

Measuring Teacher Efficacy

The first attempts of measuring teacher self-efficacy can be traced back to two Rand Corporation studies (Armor et al., 1976; Berman & McLaughlin, 1977). Since that time a variety of instruments used to measure teacher self-efficacy have been constructed and used in numerous studies spanning two decades. The most prominent instrument was the Teacher Efficacy Scale created by Gibson and Dembo (1984). Though the authors cautioned users of the need for further psychometric analysis before it was considered a valid measure, many studies continued to use the Teacher Efficacy Scale in research studies. Denzine, Cooney, and McKenzie (2005) outlined, through the use of confirmatory factor analysis, the reasons why the Teacher Efficacy Scale was not a psychometrically valid measure. Additional instruments measuring teacher efficacy have also struggled with psychometric integrity. The use of exploratory factor analysis as a commonly used form of analyses to determine the number of factors in an instrument measuring self-efficacy has fallen under attack. Muliak (1998) explained that "the continued preoccupation in the exploratory factor analysis literature with the search for optimal methods of determining the number of factors, of determining the pattern coefficients, and of rotating the factors, in the general case, reveals the inductivist aims that many have to make this method find either optimal or incorrigible knowledge" (p. 265). Roberts and Henson (2001) recommended the use of confirmatory factor analysis as a means for determining which model has the best fit.

Along with problems related to psychometric validity, teacher efficacy measures have also struggled with theoretical validity. Measures of teacher self-efficacy have

traditionally fallen into three theoretical constructs: (a) self-efficacy beliefs, (b) outcome expectations, and (c) locus of causality (Denzine et al., 2005). Questions have risen regarding the types of items used on measures and whether or not these measures honor Bandura's (1997) overall concept of self-efficacy (Coladarci & Fink, 1995; Henson, 2001). The very words used to capture teacher self-efficacy can be misleading and lead to confusing and confounding results. Pajares (1996) explained that measuring teacher efficacy in global and generic contexts leave teachers having to construct the context and environment for each question leading to ambiguous responses. Henson (2002) recommended that items measuring teacher efficacy be written with enough specificity that teachers can realize the context and situation in which the questions are situated. Having clear and specific measures can assist researchers in determining whether or not teacher self-efficacy can be considered a one factor or multidimensional construct.

Building High Teacher Efficacy

High self-efficacy can be a great boon to a new teacher. Many studies have documented the connection between teacher self-efficacy and success in the classroom. These behaviors can assist teachers to engage their students (Armor et al., 1976). Ross and Bruce (2007) found that teachers with high self-efficacy have greater chances for success in the classroom. Allinder (1994) found that teachers who have high levels of self-efficacy demonstrated competence and appeared more organized. Highly efficacious teachers were willing to try new methods (Guskey, 1988; Stein & Wang, 1988). These teachers possess greater enthusiasm for teaching (Allinder). These teachers are less critical of students who make mistakes (Ashton & Webb, 1986). These teachers persevere

in helping students that struggle (Gibson & Dembo, 1984). These teachers attend more closely to the needs of low performing students (Ashton, Webb, & Doda, 1983), and build friendly relationships with them (Ross & Bruce).

Researchers have continued to document how personal beliefs influence the decisions that people make (Bandura, 1986; Dewey, 1933; Nisbett & Ross, 1980). The beliefs of preservice teachers about their abilities to teach seem to affect how well they internalize the content of teacher education programs (Britzman, 1991; Calderhead & Robson, 1991; Zeichner & Tabachnick, 1981), which can ultimately influence the success of that program (Zeichner & Tabachnick).

It has been suggested that helping to establish efficacy and a strong belief in one's abilities during the preservice stages of teacher training may have more of an impact than waiting until after teachers are already in the classroom (Mulholland & Wallace, 2001; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Woolfolk Hoy and Burke Spero (2005) affirmed the importance of helping students establish a sense of personal efficacy for teaching early on during the preservice program and during student teaching.

Summary

This literature review suggests that high feelings of preparedness and efficacy to teach are vital for beginning teachers to be successful in the classroom, and potentially, to stay in the classroom. Preservice teachers are shaped by the experiences they have in their teacher education programs and these experiences are significant with lasting effects. As Dewey (1938) explained, "Every experience both takes up something from those which have gone before and modifies in some way the quality of those which come

after" (p. 38). The teaching faculty, curriculum, field experiences, student teaching assignments, cooperating teachers, supervisors and even the feeling tone that constitutes a teacher education program can build confidence and instill feelings of efficacy, or they can do just the opposite. Dewey continued, "Experience and education cannot be directly equated to each other. For some experiences are miseducative. Any experience is miseducative that has the effect of arresting or distorting the growth of further experience" (p. 26).

The intent of teacher education coursework and experiences is to provide opportunities that are preparatory to those experienced by teachers in the classroom (Cochran-Smith, 2006). The prospective teacher needs experiences and engagement during the teacher education program that will promote future possibilities of learning and growth (Darling-Hammond, 2003). In order to have lasting power, Darling-Hammond suggested that the teacher must feel self-assured and capable with a solid foundation on which to stand in order to meet the demands of the dynamic and ever-changing characteristics of the classroom.

Many preservice teachers in teacher preparation programs receive high grades, indicating they are meeting the expectations of the teacher preparation programs. However, a passing grade is not a true indicator of a teacher's sense of self-efficacy. It is the actual activities and experiences in the program that help to instill efficacy. Teacher education programs that provide meaningful opportunities for instruction, modeling, and feedback will also produce teachers with high levels of self-efficacy (Darling-Hammond, 2006).

This literature review pointed out areas of emphasis for future research. Woolfolk Hoy and Burke Spero (2005) suggested a need to track the development of efficacy beliefs throughout a teacher education program. Understanding more about how preservice teachers feel about their abilities and their preparedness can help a teacher education program advance and instill greater feelings of efficacy in its students. Clark (2002) further emphasized the need to follow up with graduates of teacher education programs to see how successful programs were in instilling a sense of confidence in all areas of teaching, and to determine if preservice teachers maintain their sense of efficacy once within the realities of the classroom. By tracking preservice teachers into the classroom, further research can be completed that looks at how the school context can continue to add to feelings of efficacy or how these school context experiences such as mentoring support and professional development can impede feelings of confidence and high efficacy.

Additionally, research is needed that studies multiple teacher preparation programs. All of the studies highlighted in this literature review studied only one teacher preparation program within the context of each study. Understanding how different teacher preparation programs contribute to feelings of preparedness and efficacy is needed. Each teacher preparation program is unique in the type of experiences and opportunities it provides to preservice teachers. Some programs offer two student teaching placements while others offer only one. Some programs require three literacy methods courses while others require two literacy methods courses. By including multiple institutions and teacher preparation programs, new research can be added to the

literature about how program characteristics and program distinctions can affect teacher perceptions and teacher efficacy.

CHAPTER III

METHODOLOGY

This chapter discusses the methodology used for this study. The main sections of this chapter are: research design, population and sample, data collection, instrumentation, validity and reliability, and data analysis. The research methodology section describes the research design utilized for this study. The samples section describes the participants and how the samples were created for this study. The instrumentation section outlines and describes the two surveys used in this study and how these surveys were created. The validity and reliability section describes the measures taken to ensure validity and reliability of the instruments used in this study. The data analysis section describes the procedures used in the analysis of data.

Research Design

This study was a quantitative longitudinal study utilizing preexisting presurvey and postsurvey data. The researcher sought to determine the perceptions and teacher efficacy of preservice teachers at the completion of their teacher preparation program, and then again when these same individuals were novice teachers completing their first year of teaching. This study sought to add to the current literature by collecting cross institutional data from multiple teacher preparation programs and to track individuals as they experience change and growth as developing teachers. As mentioned previously, only two other studies (Helfrich, 2007; Woolfolk Hoy & Burke Spero, 2005) have followed the same sample participants from the stage of preservice teacher to novice

teacher – one at the end of 3 months of teaching and the other at the end of a full year teaching. Data for the current study were collected at two points in time – once at the end of the teacher preparation program and again at the end of one year of teaching.

The design for this study was classified as survey research. The purpose of survey research is to obtain data from members of a population or sample to determine the status of that population with respect to one or more variable (Fraenkel & Wallen, 2000). According to Babbie (1995), "Survey research is probably the best method available to the social scientist interested in collecting original data for describing a population too large to observe directly" (p. 257).

The main independent variables in this study included the characteristics of teacher preparation programs represented by the various institutions included in this study, as well as the characteristics of schools related to the professional development and mentoring that inservice teachers experience. The three independent or explanatory variables specific to preservice teacher experiences include the type of student teaching experience (internship or student teaching), the number of student teaching placements (one or two), and the number of preservice literacy methods courses completed (two or three). The two independent or explanatory variables used to analyze inservice data included the perceived quality of professional development and the perceived quality of mentoring support.

The dependent variables in this study were determined through the use of confirmatory factor analysis. The first variable was the global factor of personal teacher efficacy, which included the perceptions of preservice and inservice teachers and their

feelings of preparedness and efficacy to teach before and after becoming a teacher. This global factor encompassed all of the subscales, which included general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment from the Utah Preservice Teacher Efficacy Scale (57 items) and the Utah Inservice Teacher Efficacy Scale (57 items). In addition, five first-order factors emerged in this analysis. These first-order factors were represented by the following subscales: general knowledge and skills (15 items), diversity and multicultural perspectives (9 items), reading (13 items), mathematics (10 items), and assessment (10 items).

Sample

The sample for this study was preexisting and consisted of elementary education graduates from teacher preparation programs throughout the state of Utah who completed a preservice and inservice teacher efficacy scale immediately after teaching for one year in a Utah elementary school. The preservice teacher sample was essentially the population of all teacher candidates in the state of Utah. This sample consisted of 2006 preservice graduates who became novice teachers during the 2006-2007 school year (N = 543) and who agreed to participate. The inservice teacher sample consists of these 2007 novice teachers who were currently teaching in an elementary classroom somewhere in the state of Utah (N = 136). Preservice and inservice teachers completed all surveys confidentially. Preservice teachers were told that the last four digits of their social security numbers would be used to match them with follow-up data in the future if they chose to teach in the state of Utah. Thus, these four digits, with collaborating data of month and year of birth, were used to match preservice teacher data with inservice

teacher surveys a year later. These data sets have been made available to the researcher for use in this dissertation. The demographics related to gender, race, ethnicity, or age for the participants was not included in the preexisting data.

Data Collection

Information from this preexisting data formed the foundation for this study. Data were gathered previously from a partnership between teacher preparation programs in the state of Utah and the Utah State Office of Education (USOE). At the conclusion of the teacher preparation program, an abridged version of the Utah Preservice Teacher Efficacy Scale (see Appendix A) was administered to assess teacher candidate perceptions of their teacher education program and their perceptions of their teacher efficacy. The Utah Inservice Teacher Efficacy Scale (see Appendix B) was administered to reassess the perceptions of these individuals after they had taught in the classroom for one full year. The first words of each item on the Utah Inservice Teacher Efficacy Scale were slightly changed to fit the present state that the participants were in. For example, "I am prepared to teach…" was changed to "I teach…" The data from the Preservice Teacher Efficacy Scale was collected by teacher preparation programs, and the data from the Inservice Teacher Efficacy Scale was collected by the USOE.

Instrumentation

Building upon instruments used in previous research on teacher efficacy, the measures constructed for this study consisted of two instruments entitled the Utah

Preservice Teacher Efficacy Scale and the Utah Inservice Teacher Efficacy Scale. These scales are almost identical in construction. The purpose of both the efficacy scales was to measure teacher efficacy on multiple subject matters and knowledge constructs. Many teacher efficacy measures combine all academic subjects together and assume that a teacher has the same feelings of self-efficacy in all areas. This goes against the theoretical concept that a person may feel highly efficacious to teach reading, but not the same high level of efficacy to teach mathematics. Bandura (1997) explained that teachers' sense of efficacy is not consistent across multiple tasks or different academic subjects. As part of this study, it was necessary to determine the validity and reliability of an efficacy scale that measured the teacher efficacy construct along the lines of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment.

The preservice and inservice efficacy scales were similar in construction with wording changes to capture the essence of teacher stage and experiences of both the preservice and inservice teacher. Respondents were asked to rate their perceptions of preparedness and efficacy to teach in the areas of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and preparation to use assessment. Preservice teachers were asked information about their teacher preparation program experiences such as name of institution, type of student teaching placement, length of student teaching, and future plans regarding their teaching career. Sample items from the Utah Preservice Efficacy Scale include the following: "I am prepared to tailor teaching and curriculum to individual students' needs," "I am prepared to address the needs of students from diverse cultural backgrounds," "I am prepared to help foster students' oral

and written responses to literature," "I am prepared to teach mathematical concepts to student groups that are mixed in ability," and "I am prepared to analyze student work in order to assess and modify my own teaching strategies." Responses to these items were made on a 5-point Likert scale ranging from "not at all" to "very well."

The questions on the Utah Inservice Teacher Efficacy Scale were very similar in nature to those on the preservice scale. Again, respondents were asked to rate their perceptions and feelings of efficacy to teach related to the same subscales of professional knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment. Sample items from the Utah Inservice Teacher Efficacy Scale include the following: "I refer students for special assistance when appropriate," "I use knowledge about linguistic differences to create learning opportunities for students," "I use a variety of reading assessments to determine students' strengths, needs, and progress," "I teach connections among mathematical ideas," and finally, "I assess higher-level objectives such as problem-solving, critical thinking, and application." Responses to these items were made on a 5-point Likert scale ranging from "not at all" to "very well."

In addition to the same subscales that were included on the Utah Preservice Efficacy Scale, inservice teachers were also asked about their perceptions of the quality of the professional development and mentoring support they received from the school in which they were teaching. Sample items from these sections of the professional development and mentoring support subscale of the Utah Inservice Teacher Efficacy Scale include the following: "In the past year, I have received professional development support designed to help me use teaching strategies designed for diverse learners," "Since

I began teaching, my mentor has worked to improve my self-efficacy," and "Since I began teaching, my mentor has modeled effective techniques of instruction." Responses to items are made on a 5-point Likert scale ranging from "not useful" to "extremely useful."

Reliability and Validity

Reliability

The Cronbach-alpha analysis (Cronbach, 1951) was utilized to determine the internal consistency of the scales from both the Utah preservice and inservice efficacy scales. Reliability is a measure based on the intercorrelation of different items on the same instrument. Testing the reliability of this instrument enabled the researcher to determine the internal consistency of the items in the instrument. Nunnaly (1978) indicated that a measure of 0.7 or greater is an acceptable reliability coefficient. All scales in this analysis met these criteria. Thus, it was determined that the different items in the scales on this instrument measured the same general construct and produced similar scores demonstrating that there was internal consistency among the items on the individual scales as well as among the items on the overall scale. In response to the high reliabilities, this researcher concluded that the Utah Preservice Teacher Efficacy Scale and the Utah Inservice Teacher Efficacy Scale should be considered reasonably reliable. The sample to determine the reliability of these instruments was 543 preservice teachers for the Utah Preservice Teacher Efficacy Scale and the 136 inservice teachers for the Utah Inservice Teacher Efficacy Scale. Table 2 lists reliability measures for each scale.

Table 2

Reliability of the Subscales from Preservice and Inservice Teacher Surveys

Subscale	Label	Cronbach preservice	Alpha inservice	Format	Number of items
genknwlskills	General knowledge & skills	0.93	0.82	Numeric	15
diversity	Diversity & multicultural perspectives	0.94	0.82	Numeric	9
reading	Reading	0.95	0.89	Numeric	13
math	Mathematics	0.95	0.86	Numeric	10
assess	Assessment	0.93	0.84	Numeric	9
overall	Overall scale	0.90	0.87	Numeric	57
profdev	Professional development	*	0.81	Numeric	14
mentsupp	Mentoring support	*	0.97	Numeric	15

*Scale not included in this survey.

Validity

The validity of a measurement is the extent to which the instrument measures the characteristics, skills, knowledge, or whatever it is designed or intended to measure (Thorndike & Dinnel, 2001). In this study, the Utah Preservice Teacher Efficacy Scale and the Utah Inservice Teacher Efficacy Scale were examined for their construct validity. The efficacy scales used in this study were modeled after the Total Quality Partnership Inservice Teacher Survey administered in Ohio. The Ohio survey is currently being used in a longitudinal novice teacher study by the Teacher Quality Partnership, and was created with information gathered from a variety of research instruments. These instruments include the following: Beginning Teacher Preparation Survey (Valli, Raths, & Rennert-Ariev, 2001); Collective Efficacy Scale (Goddard, Hoy, & Woolfolk-Hoy, 2000); National Survey of Teacher Education Graduates (Loadman, Freeman, Brookhart, Rahman, & McCague, 1999); Omnibus T-Scale (Hoy & Tschannen-Moran, 1999); Organizational Climate Index (Hoy, Smith, & Sweetland, 2002); Teacher Concerns Questionnaire (George, 1978); Teacher Efficacy Scale (Hoy & Woolfolk, 1993); and Teacher's Sense of Efficacy Scale (Tschannen-Moran et al., 1998). Additionally, there were two unpublished surveys used in the creation of the Ohio survey including: A Survey of Students and Teachers in Chicago Public Schools (Consortium on Chicago School Research, 2000); and Local Systemic Change through Teacher Enhancement – Teacher Questionnaire (Horizon Research, Inc., 2002). Data collected from the Ohio survey in the longitudinal study remained stable and similar across two years of data.

Using the Teacher Quality Partnership (TQP) Ohio survey as a model, the Utah

Preservice Teacher Efficacy Scale (see Appendix A) and the Utah Inservice Teacher Efficacy Scale (see Appendix B) were created. Alterations to the Ohio survey were made to meet the institutional data needs of the USOE and teacher preparation programs in Utah. For the purposes of this study, the items regarding general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, assessment, professional development, and mentoring support were utilized. The remaining items on the TQP Ohio survey were not included in this study. Decisions to use these items from the Ohio survey were based on pilot studies, and expert review as well as analyses completed using confirmatory factor analysis.

Research investigating the role of teacher self-efficacy in teaching effectiveness has been of interest for many decades and as a result, many efficacy scales have been produced. Armor et al. (1976) and Berman and McLaughlin (1977) were two Rand Corporation studies that generated the initial questions related to self-efficacy and thus commenced a continuous flow of research in this area (Denzine et al., 2005).

In 1997, Bandura questioned instruments measuring efficacy beliefs that were not specific enough in order to frame the context of the situation for which efficacy beliefs were measured. For example, one person may feel efficacious for teaching one subject, but not necessarily the same feelings in another subject. Additionally, teachers reporting their efficacy need to know the specific context in which the questions regarding their feelings of efficacy are posed. The question of whether or not an instrument was measuring what it intended to measure was of concern. Denzine et al. (2005) also noted substantial problems in the literature "concerning the validity of instruments that have

been used to measure teacher self-efficacy beliefs" (p. 690). These researchers were concerned that efficacy instruments were being used for research without any factor analysis or the appropriate factor analysis, to determine the number of factors that emerge from various teacher efficacy instruments.

For this purpose, the appropriate type of factor model analysis was needed to empirically examine the validity of the Utah Preservice Efficacy Scale. From the outset, an exploratory factor analysis was not considered as an option for this analysis because as explained by Henson (2001), the exploratory factor analysis is simply a theory-generating procedure, whereas the confirmatory factor analysis is a procedure used to test theory. The two factor models that presented the best options for the analysis were the confirmatory factor analysis and the bifactor path analysis. With two options available, the following question emerged: "Which factor model best accounts for the relationship between the individual items and the factors they are presumed to measure and the higher level, or first-order factors?"

The results from the confirmatory factor analysis and the bifactor path factor analysis conducted to test hypotheses regarding the factor structure of the Utah Preservice Teacher Efficacy Scale are presented below. Prior to running the confirmatory factor analysis and the bifactor path analysis, the first task was to run a bivariate correlation to determine the relationship between the five individual subscales from the Utah Preservice Teacher Efficacy Scale. The results of the bivariate correlation are presented in Table 3.

Confirmatory factor analysis. The sample used for the confirmatory factor analysis of this instrument was drawn from 543 preservice teachers in Utah, all of which

Table 3

Bivariate Correlation Between General Knowledge and Skills, Diversity and Multicultural Perspectives, Reading, Mathematics, and Assessment Subscales (N = 543)

Variable	GKS	RDG	D/MP	Math	Assess
General knowledge /skills (GKS)	--	0.675	0.703	0.682	0.688
Reading (RDG)	--	--	0.541	0.529	0.569
Diversity/ multicultural perspectives (D/MP)	--	--	--	0.526	0.593
Mathematics (Math)	--	--	--	--	0.551

had graduated with a bachelor's degree to teach elementary education. The data for this analysis was entered into AMOS 16.0 (Arbuckle, 1999). A hypothesized model of a second-order factor to account for the correlation among the five first-order factors was entered as defined in Figure 1. This model acknowledges that the five different measures of teacher self-efficacy have much in common and allows for this commonality and removes its influence from of the five first-order factors. This model also acknowledges that each of the five separate and distinct first-order factors measure a particular type of teacher self-efficacy. Fit indices and weights from the confirmatory factor analysis model can be seen in Table 4. Results from the fit indices allowed the researcher to accept the global factor with five first-order factors as having a good data fit (Dickey, 1996; Roberts, 1999; Stevens, 1996).

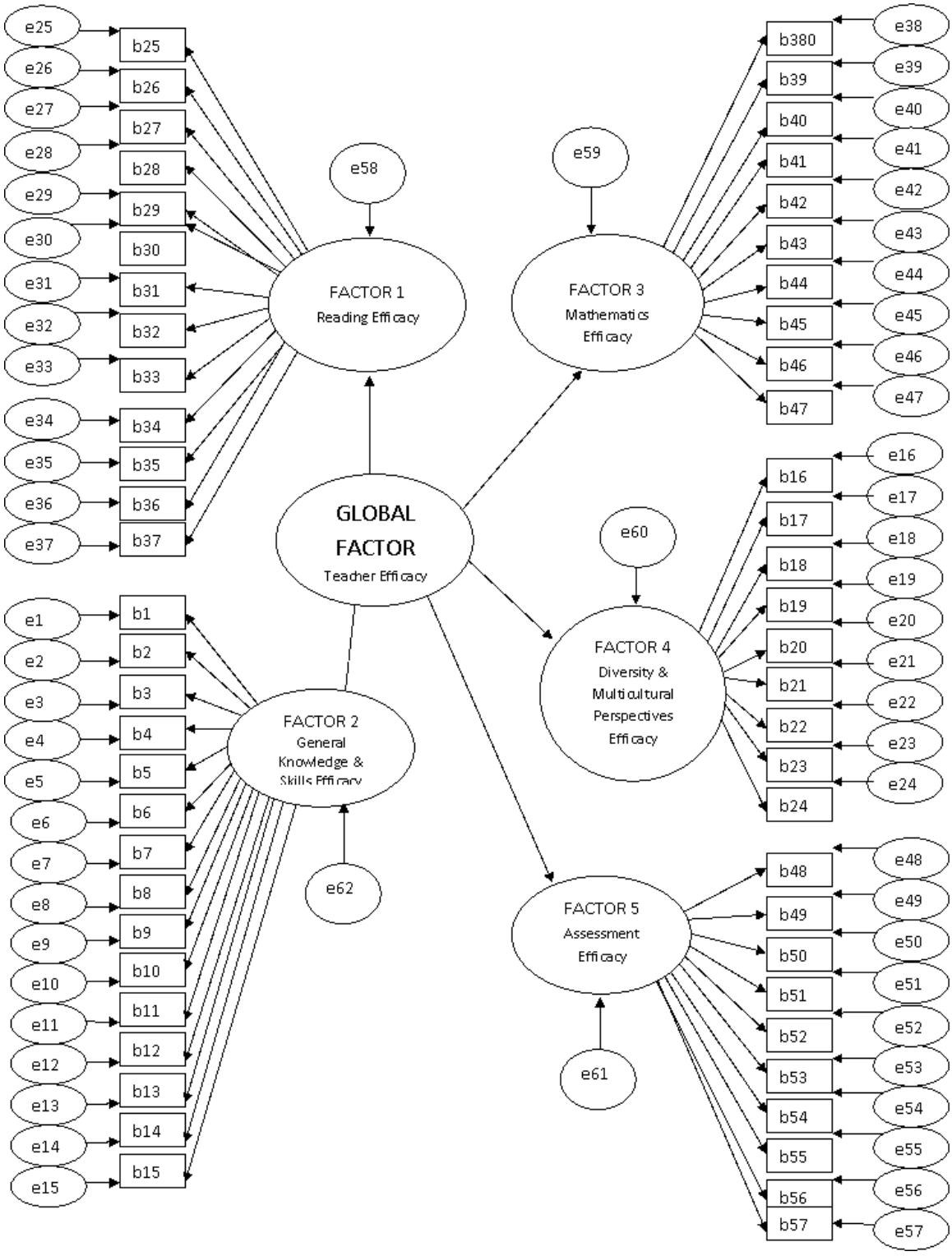

Figure 1. Confirmatory factor analysis model.

Table 4

Fit Indices Across Both the Confirmatory Factor Analysis and the Bifactor Path Analysis

	Fit index				
Model	NFI	TLI	CFI	AIC	RMSEA
CFA	0.87539	0.89162	0.89943	7441.76282	0.05284
Bifactor	0.89215	0.90603	0.91575	6592.20648	0.04921

Bifactor path analysis. As a test of construct validity, another factor analysis method was included in addition to the confirmatory factor analysis. The data for the bifactor path analysis was also entered into AMOS 16.0 (Arbuckle, 1999) and run with the same hypothesized model of one overall factor and five first-order factors as defined in Figure 2. Fit indices are presented in Table 4. Results from the fit indices allowed the researcher to again accept the global factor with five first order factors as having a good data fit (Dickey, 1996; Roberts, 1999; Stevens, 1996).

It was determined that since the fit statistics for the bifactor model were only slightly better than for the confirmatory factor analysis, the more parsimonious confirmatory factor analysis model was preferable for this study. Henson (2002) explained the following:

> Confirmatory factor analysis allows the researcher to test specific hypotheses regarding the structure of scores from instruments. Importantly, factor analysis results are a function of the scores obtained on an instrument and not the instrument only and therefore can vary across time and place. (p. 147)

Estimates of the confirmatory factor analysis model are reported in Table 5. These

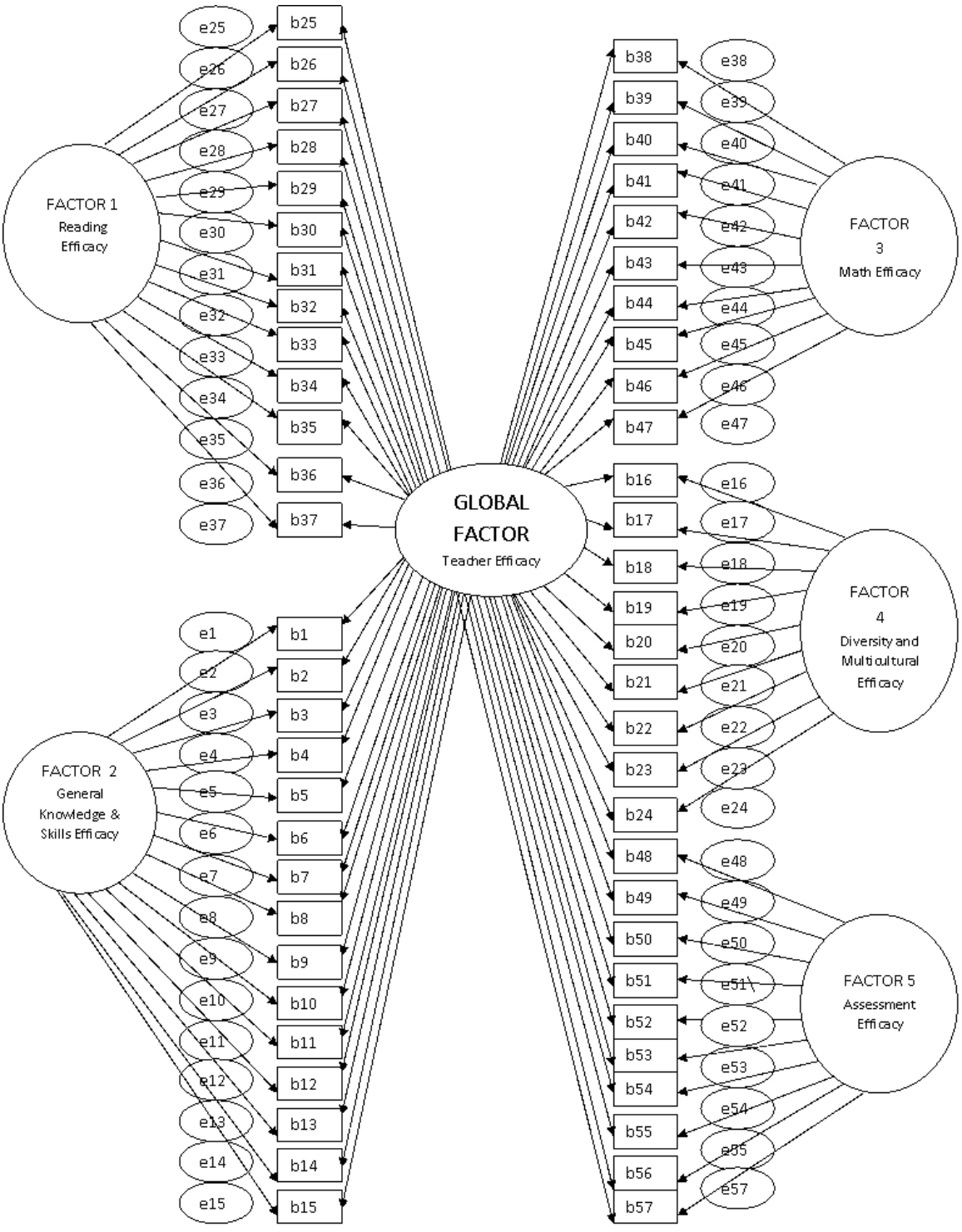

Figure 2. Bifactor path analysis model.

Table 5

Estimates of the Confirmatory Factor Analysis Model for the Utah Teacher Efficacy Scale

Latent variable	Factor	Unstandardized estimate	Standard error	C.R.	Stand. estimate
Factor 1	Global	0.55703	0.02141	26.01340	0.81589
Factor 3	Global	0.56450	0.02288	24.68329	0.73135
Factor 4	Global	0.51852	0.02238	23.17186	0.78705
Factor 5	Global	0.55967	0.02003	27.93758	0.85139
Factor 2	Global	0.52846	0.02205	23.96113	0.89561
b16	Factor 4	1.00000			0.71723
b17	Factor 4	1.11201	0.04039	27.53227	0.80383
b18	Factor 4	1.04164	0.04314	24.14612	0.70672
b19	Factor 4	1.06585	0.04198	25.38974	0.74284
b20	Factor 4	1.15458	0.04038	28.59020	0.83443
b21	Factor 4	1.19268	0.04584	26.02105	0.76048
b22	Factor 4	1.16320	0.04004	29.05081	0.84748
b23	Factor 4	1.15486	0.04078	28.32049	0.82623
b24	Factor 4	1.19314	0.04413	27.03748	0.79009
b38	Factor 3	1.00000			0.83471
b39	Factor 3	1.06631	0.02824	37.76439	0.85532
b40	Factor 3	1.13475	0.02893	39.22654	0.87439
b41	Factor 3	1.01649	0.03052	33.30356	0.79092
b42	Factor 3	1.12956	0.03303	37.24540	0.84805
b43	Factor 3	1.07695	0.02785	38.67557	0.86729
b44	Factor 3	1.00770	0.03081	32.70441	0.78100
b45	Factor 3	0.71561	0.02743	26.08564	0.66530
b46	Factor 3	1.01807	0.02916	34.91396	0.81468
b47	Factor 3	0.99897	0.03195	31.26248	0.75781
b29	Factor 1	1.00000			0.77845
b37	Factor 1	1.00301	0.03862	25.97335	0.69605
b36	Factor 1	1.05703	0.03687	28.67104	0.75495
b35	Factor 1	1.09157	0.03670	29.74509	0.77767
b34	Factor 1	1.09904	0.03544	31.01448	0.80383

(table continues)

Latent variable	Factor	Unstandardized estimate	Standard error	C.R.	Stand. estimate
b33	Factor 1	1.10815	0.03784	29.28506	0.76793
b32	Factor 1	1.14513	0.03888	29.45508	0.77204
b31	Factor 1	0.92954	0.03396	27.36783	0.72723
b30	Factor 1	1.04808	0.03322	31.54807	0.81444
b29	Factor 1	0.97127	0.03109	31.24403	0.80884
b28	Factor 1	1.09040	0.03610	30.20861	0.78712
b27	Factor 1	1.09977	0.03369	32.64560	0.83628
b26	Factor 1	1.08113	0.03404	31.76423	0.81876
b15	Factor 2	1.06880			
b14	Factor 2	1.06680	0.05097	20.97014	0.64685
b13	Factor 2	0.93197	0.05552	19.21515	0.58804
b12	Factor 2	1.09024	0.03833	24.31480	0.76335
b11	Factor 2	0.71873	0.04317	25.25357	0.79649
b10	Factor 2	1.02032	0.03717	19.33462	0.59232
b9	Factor 2	0.92675	0.03968	25.71492	0.81338
b8	Factor 2	0.87334	0.03832	24.18187	0.75792
b7	Factor 2	0.96418	0.03963	22.03769	0.68337
b6	Factor 2	1.05663	0.04079	23.63958	0.73916
b5	Factor 2	0.86419	0.04301	24.56758	0.77167
b4	Factor 2	0.97817	0.04883	17.69738	0.53868
b3	Factor 2	0.98953	0.04265	22.93519	0.71438
b2	Factor 2	1.02726	0.04172	23.71877	0.74153
b1	Factor 2	1.00000	0.04360	23.56126	0.73642
					0.67215
B48	Factor 5	1.00000			0.80385
B49	Factor 5	1.02499	0.03389	30.24869	0.76622
B50	Factor 5	1.00565	0.02998	33.54354	0.82561
B51	Factor 5	1.05371	0.03325	31.68769	0.79277
B52	Factor 5	1.01696	0.02918	34.85574	0.84791
B53	Factor 5	1.04249	0.03239	32.18424	0.80171
B54	Factor 5	1.06469	0.02980	35.72472	0.86238
B55	Factor 5	1.01427	0.02898	34.99312	0.85042
B56	Factor 5	1.04705	0.04514	23.19516	0.62207
B57	Factor 5	1.13012	0.04321	26.15121	0.68515

results lend support to the validity of the Utah Preservice Teacher Efficacy Scale and for its use in the current research study.

Data Analysis Procedures

All data from the surveys were analyzed using the Statistical Package for Social Sciences (SPSS) for Windows (15.0) and Amos (16.0). The research questions and corresponding data analyses were as follows.

Research Question One

How do preservice teachers rate their feelings of preparedness and teacher self-efficacy?

Preservice teachers were administered the Utah Preservice Teacher Efficacy Scale (see Appendix A) at the conclusion of their teacher preparation program. Descriptive data including scale means, standard deviations, and frequency distributions are reported for the preservice teacher sample.

Research Question Two

What teacher preparation program variables are associated with the perceptions and feelings of preservice teacher self-efficacy?

Are the differences in teacher preparation programs associated with how prepared teachers feel? The program variables are what make each teacher preparation program unique. The program variables in this research question were the following:

1. Type of student teaching experience (Did you participate in an internship?

Yes/No)

2. Number of student teaching placements (Did you complete more than one student teaching placement? Yes/No)

3. Number of literacy methods courses (How many literacy methods courses - including both reading and language arts methods courses- were you required to have? Two or three) Mathematics courses were not utilized as part of the analysis because all the teacher preparation programs in this study required only one mathematics methods course.

For these categorical variables, ANOVAs were used to determine statistically significant variables and effect sizes are reported.

Research Question Three

How do these same individuals rate their feelings of preparedness and teacher self-efficacy after their first year of teaching?

Novice teachers were administered the Utah Inservice Teacher Efficacy Scale (see Appendix B) at the conclusion of one full year teaching. Descriptive data including scale means, standard deviations, and frequency distributions are reported for the inservice teacher sample.

Research Question Four

What school context variables are associated with the perceptions and feelings of inservice teacher self-efficacy?

The school context variables are what make each elementary school unique. Are

the differences in schools (such as professional development and mentoring support opportunities) associated with how prepared teachers feel? The school context variables in this research question were the following.

1. Professional development (How would you rate the professional development support you have received? 0-70 points)

2. Mentoring support (How would you rate the mentoring support you have received? 0-75 points)

For these continuous variables, correlations were run to determine if there are any significant correlations between school context variables and inservice teacher efficacy scores.

Research Question Five

In what ways do perceptions of preservice teachers change after a year of teaching?

The Utah Preservice Teacher Efficacy Scale and the Utah Inservice Teacher Efficacy Scale that was administered to preservice and inservice teachers were compared for this analysis. Using the last four digits of the social security numbers and the birth month provided by the participants, the researcher was able to match participants. In cases where there was more than one person with the same social security numbers and birth month, the college identifier was used to provide further detail in order to match participants. Of the 543 participants, 123 matches were made. This matched group sample was used for this research question. A repeated measures analysis was used with teaching stage (preservice or novice teacher) as the within-subject variable and the

various scale scores as the outcome variable to determine differences, if any, between preservice and novice teacher groups.

CHAPTER IV

RESULTS

The purpose of this study was to examine the perceptions of preservice teachers regarding their preparedness to teach and feelings of teacher efficacy and then to examine the perceptions of these same individuals after they had taught in the classroom for 1 year. Study participants had all graduated from a teacher preparation program and went on to teach in an elementary school located in Utah. In order to determine the feelings of efficacy and changes therein, preservice teachers were administered the Utah Preservice Teacher Efficacy Scale at the conclusion of their teacher preparation program, and then a sample of these same individuals were administered the Utah Inservice Teacher Efficacy Scale after 1 full year of teaching. For the purposes of this study, there were 57 identical items appearing on both the preservice and inservice survey that formed the basis of this study. These items were divided into five subscales: general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment.

The dependent variable for this study was the preservice and novice teachers' perceptions of preparedness and feelings of teacher efficacy. The independent variable was the teaching stage they were in – namely preservice teacher and/or inservice teacher. Additionally, other variables related to the teacher preparation program experiences for the preservice teachers as well as school context experiences for the inservice teachers were utilized. In this chapter, the findings for the five research questions are reported and analyzed ending with a summary of the conclusions and findings of this analysis.

Research Question One

The first research question was, "How do preservice teachers rate their feelings of preparedness and teacher self-efficacy?" To analyze this question, descriptive data such as item means, standard deviations, scale means, scale standard deviations, and scale frequency distributions were reported for each item on the five subscales: (a) general knowledge and skills, (b) diversity and multicultural perspectives, (c) reading, (d) mathematics, and (e) assessment.

General Knowledge and Skills

The first subscale consisted of measuring the perceptions of preservice teachers regarding their general knowledge and skills at the conclusion of their teacher preparation program. This subscale sought to determine how preservice teachers felt about their teaching responsibilities such as setting appropriately challenging learning expectations, addressing special learning needs, using educational technology, integrating subject matter knowledge, motivating students, and referring students for special assistance when needed.

Participants were asked to rate their feelings of efficacy and preparedness regarding their general knowledge and skills on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consisted of 15 items (see Table 6). As shown in the table, preservice teachers reported feeling generally "well prepared" in regards to their general teaching knowledge and skills with an overall item mean of 4.14. On average, the preservice teachers felt most confident in their abilities to use the state's core

Table 6

Preservice Teachers' Reported General Knowledge and Skills Teacher Efficacy (N = 543)

Item (1 = Not at all, 5 = Very well)	Percentage						
	Not at all	Poorly	Adequately	Well	Very well	Mean	*SD*
1- I am prepared to improve the academic performance of challenging or unmotivated students.	0.6	10.0	28.5	40.5	20.5	3.70	0.92
2 - I am prepared to tailor teaching and curriculum to individual students' needs.	0.2	5.0	19.6	45.3	29.9	4.00	0.84
3- I am prepared to develop curriculum that builds on students' experiences, interests, and abilities.	0.0	2.6	10.9	41.4	45.1	4.29	0.76
4- I am prepared to relate classroom learning to the real world.	0.0	2.6	14.9	39.1	43.4	4.23	0.80
5- I am prepared to use educational technology in instruction.	0.2	6.1	25.8	35.8	32.1	3.94	0.92
6- I am prepared to choose different teaching strategies to meet the needs of different ability levels of students.	0.0	2.2	16.6	43.1	38.1	4.17	0.78
7- I am prepared to maintain an orderly, purposeful learning environment.	0.0	1.7	9.4	38.6	50.3	4.38	0.72
8- I am prepared to engage students in cooperative work.	0.0	1.1	10.1	33.2	55.5	4.43	0.72
9- I am prepared to integrate subject matter knowledge, learning and student development, and curriculum to plan effectively.	0.0	0.7	8.1	39.2	51.9	4.42	0.67
10- I am prepared to create learning experiences that make the central concepts of the subject matter meaningful to students.	0.0	0.7	12.0	43.5	43.8	4.30	0.70
11- I am prepared to use the state's core curriculum and performance standards to plan instruction.	0.2	1.3	7.2	23.4	67.9	4.58	0.70
12- I am prepared to motivate students for academic tasks.	0.2	3.3	15.5	43.9	37.3	4.15	0.80
13- I am prepared to teach basic knowledge and skills.	0.7	8.5	36.2	54.5		4.45	0.68
14- I am prepared to refer students for special assistance.	4.6	12.7	30.8	28.7	23.4	3.53	1.1
15- I am prepared to prepare students to be engaged citizens in a democracy.	3.1	5.5	29.5	36.5	25.3	3.75	0.97

curriculum and performance standards to plan instruction (see item 11); to teach basic knowledge and skills (see item 13); and to engage students in cooperative group work (see item 8). Preservice teachers felt least confident in their abilities to refer students for special assistance when needed (see item 14); to improve academic performance of unmotivated or challenging students (see item 1), and to prepare students to be engaged citizens in a democracy (see item 15).

The general knowledge and skills subscale score for preservice teachers (N = 543) had a scale mean of 62.44, a standard deviation of 8.50, and a range of 15-75 points. Cronbach's alpha reliability for this subscale was 0.925 indicating there was a strong correlation among all the items on the subscale.

Diversity and Multicultural Perspectives

The second subscale required that preservice teachers self-report their preparedness and efficacy for items related to diversity and multicultural perspectives. This subscale sought to determine how preservice teachers felt about teaching responsibilities related to diversity and multicultural perspectives such as implementing strategies to help students from different cultures interact positively with one another, teaching in ways that support students learning English as a second language, using knowledge about linguistic differences to create learning opportunities for students, and using community resources to create a multicultural curriculum.

Participants were asked to rate their feelings of preparedness regarding diversity and multicultural perspectives on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consisted of nine items (see Table 7). As shown in the table,

Table 7

Preservice Teachers' Reported Diversity and Multicultural Perspectives Teacher Efficacy (N = 528)

Item (1 = Not at all, 5 = Very well)	Percentage					Mean	*SD*
	Not at all	Poorly	Adequately	Well	Very well		
1- I am prepared to help parents understand their children and support their learning.	1.1	9.60	27.50	38.70	23.10	3.73	0.95
2- I am prepared to implement strategies to help students from different cultures interact positively with each other.	2.0	8.30	26.2	37.1	26.4	3.77	1.0
3- I am prepared to use community resources to create a multicultural curriculum.	2.0	8.5	29.9	32.5	27.1	3.74	1.0
4- I am prepared to work with parents and families to help me understand students and support their learning.	0.9	7.4	26.2	37.0	28.5	3.85	0.95
5- I am prepared to develop a curriculum that includes the perspectives, experiences, contributions of different cultural groups.	1.3	7.2	29.2	37.3	25.1	3.78	0.95
6- I am prepared to teach in ways that support students learning English as a second language.	4.6	14.2	28.4	29.9	22.9	3.52	1.1
7- I am prepared to address the needs of students from diverse cultural backgrounds.	2.2	8.0	29.6	36.9	23.3	3.71	0.98
8- I am prepared to encourage students to see, question, and interpret ideas from diverse perspectives.	2.0	7.4	26.8	37.3	26.6	3.79	0.98
9- I am prepared to use knowledge about linguistic differences to create learning opportunities for students.	3.1	13.7	31.1	31.3	20.7	3.53	1.1

preservice teachers reported feeling mostly “adequately prepared” to “well prepared” in regards to their efficacy related to diversity and multicultural perspectives. The overall item mean was 3.71.

On specific items, preservice teachers felt most confident in their abilities to work with parents and families to help them understand and to support student learning (see item 4); to encourage students to see, question, and interpret ideas from diverse perspectives (see item 8); and to develop a curriculum that includes the perspectives, experiences, contributions of different cultural groups (see item 5). Preservice teachers felt least prepared to teach in ways that support students learning English as a second language (see item 6); and to use knowledge about linguistic differences to create learning opportunities for students (see item 9); and to address the needs of students from diverse cultural backgrounds (see item 7).

The diversity and multicultural perspective subscale score for preservice teachers (N = 528) had a scale mean of 33.43, a standard deviation of 7.48, and a range of 9-45 points. Cronbach‘s alpha reliability for this subscale was 0.942 indicating there was a strong correlation among all the items on this subscale.

Reading

The third subscale consisted of measuring the preservice teachers’ feelings of efficacy and preparedness to teach reading at the conclusion of their teacher preparation program. Items in this subscale included topics such as teaching reading vocabulary, understanding how children come to acquire reading and writing skills, adapting reading instruction to accommodate students with special needs, and using a variety of reading

assessments to determine students' strengths, needs, and progress.

Participants were asked to self-report on their preparedness and efficacy to teach reading on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consisted of thirteen items (see Table 8). As shown in Table 8, preservice teachers reported feeling generally "well prepared" in regards to their abilities to teach reading with an overall item mean of 4.07. On average, the preservice teachers felt most confident in their abilities to use comprehension activities (see item 5); to use a variety of reading assessments to determine students' strengths, needs, and progress (see item 7); and to use instructional strategies to help children with their reading comprehension (see item 6). Preservice teachers felt least prepared to adapt reading instruction to accommodate students with special needs (see item 13), to evaluate reading materials for their usefulness and appropriateness for the students (see item 9), and to teach reading to groups of mixed abilities (see item 8).

The reading subscale score for preservice teachers (N = 543) had a scale mean of 53.05, a standard deviation of 9.35, and a range of 13-65 points. Cronbach's alpha reliability for this subscale was 0.947, indicating there was a strong correlation among all the items on this subscale.

Mathematics

The fourth subscale required that preservice teachers self-report their perceptions of preparedness to teach mathematics at the conclusion of their teacher preparation program. This subscale sought to determine how preservice teachers felt about teaching

Table 8

Preservice Teachers' Reported Reading Teacher Efficacy (N = 543*)*

Item (1 = Not at all, 5 = Very well)	Percentage					Mean	*SD*
	Not at all	Poorly	Adequately	Well	Very well		
1- I am prepared to teach reading vocabulary.	0.00	4.4	18.3	39.3	38.0	4.11	0.85
2- I am prepared to teach oral reading.	0.4	4.3	20.1	37.2	38.1	4.08	0.88
3- I am prepared to foster students' oral or written responses to literature.	0.4	4.2	20.5	37.3	37.6	4.08	0.88
4- I am prepared to teach silent reading.	0.6	5.7	20.7	31.4	41.7	4.08	0.95
5- I am prepared to use comprehension activities.	0	1.7	13.5	34.3	50.7	4.34	0.77
6- I am prepared to instructional strategies to help children with their reading comprehension.	0	4.6	14.6	34.7	46.1	4.22	0.86
7- I am prepared to use a variety of reading assessments to determine students' strengths, needs, and progress.	0.2	3.1	15.5	31.8	49.4	4.27	0.85
8- I am prepared to teach reading to groups that mixed abilities.	1.7	7.2	20.7	35.9	34.4	3.94	1.0
9- I am prepared to evaluate reading materials for their usefulness and appropriateness for the students.	1.8	7.6	21.0	35.6	33.9	3.92	1.0
10- I am prepared to understand how youngsters come to acquire reading and writing skills.	0.7	5.4	19.8	34.2	39.9	4.07	0.94
11- I am prepared to use the textbook as a resource in reading rather than as the primary instructional tool.	0.7	5.7	17.7	30.3	45.6	4.14	9.5
12- I am prepared to teach reading (oral or silent) during social studies, science, or mathematics.	0.9	6.3	22.5	33.4	36.9	3.99	0.96
13- I am prepared to adapt reading instruction to accommodate students with special needs.	0.7	11.6	28.0	31.5	28.0	3.75	1.0

mathematics in such areas as using mathematical problem solving processes in teaching, teaching mathematical representations, integrating mathematics with other subject areas, teaching connections among mathematical ideas, and taking into account students' prior conceptions about mathematics when planning curriculum and instruction.

Participants were asked to rate themselves on their feelings of preparedness and efficacy on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consists of ten items (see Table 9). As shown in Table 9, preservice teachers reported feeling generally "well prepared" in regards to their mathematical teaching efficacy with an overall item mean of 4.06. On average, the preservice teachers felt most confident in their abilities to use manipulatives in mathematics (see item 8); to teach mathematical representations (see item 2); and to use mathematical problem solving processes in teaching (see item 1). Preservice teachers generally felt less confident in their abilities to teach mathematical concepts to student groups that are mixed in abilities (see item 5); to use mathematics communication processes in teaching (see item 3); and to integrate mathematics with other subjects (see item 4).

The mathematics subscale score for preservice teachers (N = 533) had a scale mean of 40.63, a standard deviation of 7.54, and a range of 10-50 points. Cronbach's Alpha reliability for this subscale was .946 indicating there was a strong correlation among all the items on this subscale.

Assessment

The fifth subscale contained questions about how prepared preservice teachers felt to use assessment practices in the classroom. This scale sought to determine how

Table 9

Preservice Teachers' Reported Mathematics Teacher Efficacy (N = 533*)*

Item (1 = Not at all, 5 = Very well)	Percentage						
	Not at all	Poorly	Adequately	Well	Very well	Mean	*SD*
1- I am prepared to use mathematical problem solving processes in teaching.	0.6	3.7	19.3	42.0	34.4	4.06	0.86
2- I am prepared to teach mathematical representations.	0.7	5.4	16.2	40.0	37.6	4.08	0.90
3- I am prepared to use mathematics communication processes in teaching.	0.9	7.0	22.1	34.9	35.1	3.96	0.97
4- I am prepared to integrate mathematics with other subjects.	1.3	6.5	21.0	36.0	35.3	3.97	0.969
5- I am prepared to teach mathematical concepts to student groups that are mixed in ability.	1.7	7.4	26.9	35.6	28.4	3.82	0.983
6- I am prepared to teach connections among math ideas.	0.9	4.6	19.4	37.3	37.7	4.06	9.15
7- I am prepared to use discovery approaches in mathematics.	0.9	4.6	16.4	35.2	42.8	4.14	0.917
8- I am prepared to use manipulatives in mathematics.	0.7	1.1	8.1	29.9	60.1	4.48	0.754
9- I am prepared to take into account students' prior conceptions about mathematics.	1.8	3.7	20.3	36.0	38.2	4.05	0.947
10- I am prepared to use the textbook as a resource in mathematics rather than as the primary instructional tool.	1.5	6.1	20.1	35.1	37.3	4.01	0.976

preservice teachers felt about their preparedness in the area of assessment. Topics in this subscale included using standardized and student assessments to guide decisions about what skills, concepts, and processes to teach; analyzing student work in order to assess and modify your own teaching strategies; aligning assessments with expectations of what students should be able to know and do; monitoring students' progress and adjusting instruction accordingly; and creating assessments that prepare students to be successful in taking core texts.

Participants were asked to self-report their feelings of preparedness and teacher efficacy in assessment on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consisted of ten items (see Table 10). As shown in the table, preservice teachers reported feeling generally "well prepared" in regards to their teaching efficacy in assessment with an overall item mean of 4.20. On average, the preservice teachers felt most confident in their abilities to monitor students' progress and adjust instruction accordingly (see item 8), to use alternative assessment practices (see item 6), to analyze student work in order to assess and modify their own teaching (see item 5), and to align assessments with expectations of what students should know and be able to do (see item 3). Preservice teachers felt least confident in their abilities to create assessments that prepare students to be successful in taking core tests (see item 10), to use state core test results to inform instructional planning (see item 9), and to assess higher level objectives (see item 4).

The assessment subscale score for preservice teachers (N = 540) had a scale mean of 42.04, a standard deviation of 6.66, and a range of 10-50 points. Cronbach's Alpha

Table 10

Preservice Teachers' Reported Assessment Teacher Efficacy (N = 543*)*

Item (1 = Not at all, 5 = Very well)	Percentage					Mean	*SD*
	Not at all	Poorly	Adequately	Well	Very well		
1- I am prepared to evaluate how well students are learning.	0.4	1.1	13.3	40.8	44.5	4.28	0.76
2- I am prepared to use standardized assessments to guide decisions about what skills, concepts, and processes to teach.	0.4	3.0	19.4	39.5	37.8	4.11	0.84
3- I am prepared to align assessments with expectations of what students should know and be able to do.	0.0	0.9	12.9	37.8	48.3	4.34	0.73
4- I am prepared to assess higher level objectives.	0.4	4.1	19.7	38.4	37.5	4.08	0.87
5- I am prepared to analyze student work in order to assess and modify my own teaching.	0.0	0.9	13.3	37.1	48.7	4.34	0.74
6- I am prepared to use alternative assessment practices.	0.4	1.8	12.4	33.4	52.0	4.35	0.79
7- I am prepared to use student assessments to guide decisions about what skills, concepts, and processes to teach.	0.0	1.5	13.1	36.0	49.4	4.33	0.76
8- I am prepared to monitor students' progress and adjust instruction accordingly.	0.0	1.3	11.1	37.0	50.6	4.37	0.73
9- I am prepared to use state core test results to inform instructional planning.	4.1	7.0	17.4	29.9	41.6	3.98	1.1
10- I am prepared to create assessments that prepare students to be successful in taking core tests.	3.5	9.2	20.1	32.1	35.1	3.86	1.1

reliability for this subscale was 0.927, indicating there was a strong correlation among the items on this subscale.

In summary, the preservice teachers in this study overall felt "well prepared" and had high teacher self-efficacy in the areas of general knowledge and skills, reading, mathematics, and assessment. In the area of diversity and multicultural perspectives, preservice teachers reported lower feelings of efficacy with more participants rating themselves as "adequately prepared" to "well prepared."

Research Question Two

The second research question was, "What teacher preparation program variables are associated with the perceptions and feelings of preservice teacher self-efficacy?" Each teacher preparation program is unique and offers a variety of experiences for their students. For example, some programs provide two student teaching placements while other programs offer only one student teaching placement. Other teacher preparation programs offer an academic year-long internship option instead of a traditional student teaching experience. This research question sought to determine if these differences or program variations change the perceptions and feelings of efficacy that preservice teachers have about their preparation to teach. For this analysis, this question was categorized into three sub questions:

1. How did the type of student teaching experience (internship or student teacher) affect the feelings of preparedness and efficacy of preservice teachers?
2. How did the number of student teaching placements (one or two) affect the

feelings of preparedness and efficacy of preservice teachers?

3. How did the number of literacy methods courses (two or three) that preservice teachers took affect the feelings of preparedness and efficacy of preservice teachers?

Descriptive statistics (see Table 11) using the global factor of preservice teacher efficacy aggregated by the three program variables were computed. These data help in the interpretation of the ANOVAs that follow.

To determine whether there was a statistically significant difference in preservice teachers' perceptions and feelings of teacher self-efficacy based on program variables, one global factor that combined all the subscales (general knowledge and skills, diversity, reading, mathematics, and assessment) was used for this analysis. For this research

Table 11

Descriptive Data of Preservice Teachers Aggregated by Teacher Preparation Program Variables

Program variable	*n*	Mean	*SD*
Type of student teaching			
Student teaching	378	229.51	33.89
Internship	126	221.82	30.82
Number of student teaching placements			
One placement	295	229.86	33.15
Two placements	207	223.29	32.97
Number of literacy methods courses			
Two methods courses	205	213.78	30.88
Three methods courses	304	237.21	31.27

question, the global factor represents preservice teacher efficacy. ANOVAs were conducted using the program variables of student teaching placement or internship, number of student teaching placements, and the number of literacy methods courses as independent variables and the preservice teachers' perceptions of preparedness and feelings of efficacy to teach as the dependent variable. The results of the ANOVAs comparing preservice teacher efficacy scores corresponding with the three program variables are shared below.

Some of the differences in group means reported in this study are classified as being statistically significant, while other mean differences are labeled as not statistically significant. In this context, the term significant is not synonymous with important. A significant result simply indicates that the difference in the observed sample means was larger than could reasonably be expected from sample-to-sample variability in the make-up of the particular samples being compared. In other words, the observed mean difference would most likely reoccur if the study were replicated on other samples selected from the same populations. Hence, a significant result indicates that the observed difference is dependable, and an observed difference in group means that is not statistically significant indicates that the observed difference is small enough that it could have resulted from "chance" (i.e., sample-to-sample variability in the make-up of the samples being compared).

Although significance tests are helpful, they do not provide information about the absolute magnitude of an observed mean difference. For this reason, by themselves they are not sufficient. They do not indicate whether an observed difference is meaningful in

terms of educational theory or practice. Effect sizes measures are used for the purpose of quantifying the extent to which an observed difference in group means has practical significance or importance.

The partial eta^2 statistic generated by the SPSS software was used as an effect size measure in this study. The meaning and interpretation of partial eta^2 is somewhat dependent on the nature of the design used to collect and analyze the data. Partial eta^2 is an estimate of the degree of association for the sample. When calculating the effect size for an ANOVA, the partial eta^2 statics is calculated by taking the Sums of Squares$_{Between}$ and dividing it by the Sums of Squares$_{Between}$ plus the Sums of Squares$_{Error}$. Using the data from Table 12 as an example, the partial eta^2 statistic for the ANOVA of student teachers vs. interns is 5596.747 divided by (5596.747 + 551835.25) which equals .010. Cohen (1988) provided guidelines for interpreting partial eta^2 based on a survey of the research literature. He suggested that partial eta^2 values of .01 are indicative of a small effect, .06 is indicative of a medium effect, and .15 is indicative of a large effect.

Internship or Student Teaching

An ANOVA was conducted using the global preservice teacher efficacy factor to determine the effects that type of student teaching had on preservice teachers' perceptions of preparedness and teacher efficacy. Preservice teachers were aggregated into two groups: (a) preservice teachers that were given a student teaching assignment with a cooperating teacher, and (b) preservice teachers that were given an internship that lasted for one academic year with no cooperating teacher in the classroom. The preservice teachers that did not participate in an internship, but participated in a traditional student

Table 12

ANOVAs of Program Variables and Preservice Teachers' Global Teacher Efficacy

Source	*SS*	*df*	*MS*	*F*	*p*	Partial eta^2
Student teaching vs. internships						
Between groups	5596.747	1	5596.547	5.091	0.024	0.010
Error	551835.235	502	1099.273			
Total	557431.982	503				
Number of student teaching placements						
Between groups	5252.584	1	5252.584	4.801	0.029	0.010
Error	547031.91	500	1094.06			
Total	552284.494	501				
Number of literacy methods courses						
Between groups	67260.238	1	67260.238	69.481	0.000	0.121
Error total	490792.78	507	968.033			
Total	558053.01	508				

teaching assignment, had statistically significant higher means and therefore higher feelings of preparedness and teacher efficacy than those that participated in an internship (see Table 12). The effect size for this analysis was small at 0.01.

Number of Student Teaching Placements

An ANOVA was conducted to determine the effects that the number of student teaching placements had on preservice teachers' perceptions of preparedness and feelings of efficacy. Preservice teachers were aggregated into two groups: (a) student teachers that had one student teaching placement, meaning they spent their entire student teaching assignment in one classroom; and (b) student teachers that had two student teaching

placements, meaning they spent their student teaching assignment in two separate classrooms – usually in a lower elementary classroom and an upper elementary classroom. Results showed that preservice teachers completing one student teaching placement had statistically significant higher means than those completing two student teaching placements (see Table 11). The partial eta^2 effect size was low at 0.01.

Number of Literacy Methods Courses

An ANOVA was conducted to determine the effects that the number of required literacy methods courses had on preservice teachers' perceptions of preparedness and feelings of efficacy regarding. Preservice teachers were aggregated into two groups: (a) preservice teachers provided with two literacy methods courses, and (b) preservice teachers with three literacy methods courses. Results showed that preservice teachers taking three literacy courses had higher means than those who took only two literacy courses. There was a statistically significant difference between the two groups of preservice teachers (see Table 12), with a moderate to large effect size of 0.121.

The results of the ANOVAs between program variables and preservice teacher efficacy seem to indicate that the way teacher preparation programs organize their student teaching experiences and the number of literacy methods courses they offer makes a difference on preservice teachers' feelings of teacher efficacy. Given the fact that the effect size was low for the student teachers vs. interns and the student teachers with one or two student teaching placements, the practical significance is less compelling.

The finding regarding how many literacy methods courses, however, does seem more convincing. The moderate to large effect size indicates that teacher preparation

programs should consider the number of literacy courses that students are required to take in order to increase the chances that higher preservice teacher efficacy will result.

The findings were fairly consistent when ANOVAs were calculated using the individual subscale factors with the same program variables including type of student teaching placement, number of student teaching placements, and number of literacy methods courses (see Table 13). It should be noted that an analysis of variance was not calculated to determine the effect that the number of literacy methods courses had on preservice teacher efficacy in mathematics. Theoretically, literacy methods courses should not have an impact on teacher efficacy in mathematics.

The results of the ANOVAs reporting the effect that type of student teaching assignment had on preservice teacher efficacy in diversity and math indicated a statistically significant difference, but the effect size was very low. The results of the ANOVAs reporting the effect that one or two student teaching placements had on preservice teacher efficacy in general knowledge, mathematics, and assessment indicated a statistically significant difference, but again the effect size was very low. The results of the ANOVA reporting the effects that having two or three literacy methods courses had on preservice teacher efficacy in general knowledge, diversity, reading, and assessment indicated there were statistically significant differences. The moderate to large effect sizes ranging from 0.059 to 0.127 indicates the need for teacher preparation programs to consider an increase in the number of literacy courses that students are required to take in order to increase the chances that higher preservice teacher efficacy will result.

Table 13

ANOVAs of Program Variables and Preservice Teachers' General Knowledge and Skills, Diversity and Multicultural Perspectives, Reading, Math, and Assessment Teacher Efficacy

Source	*F*	*p*	Partial eta^2
General knowledge and skills			
Intern or student teacher[a]	2.38	0.124	--
One placement[a] or two placements	4.913	0.027	0.009
Two or three[a] literacy methods	32.865	0.000	0.059
Diversity and multicultural perspectives			
Intern or student teacher[a]	3.872	0.050	0.007
One placement[a] or two placements	1.687	0.195	0.003
Two or three[a] literacy methods	40.045	0.000	0.070
Reading			
Intern or student teacher[a]	1.911	0.179	--
One placement[a] or two placements	1.101	0.295	--
Two or three[a] literacy methods	76.918	0.000	0.127
Mathematics			
Intern or student teacher[a]	7.216	0.007	0.014
One placement[a] or two placements	7.117	0.008	0.013
Assessment			
Intern or student teacher[a]	1.423	0.233	--
One placement[a] or two placements	5.456	0.020	0.010
Two or three[a] literacy methods	37.462	0.000	0.065

[a] reporting higher means

Research Question Three

A year after the information regarding preservice teachers had been collected, the research team involving the Utah State Office of Education and the teacher preparation programs throughout the state sought to gather teacher self-efficacy information from a group of novice teachers taken from the original population of preservice teachers. Participants of the preservice population who had secured employment in a school district within the state of Utah were sent the Utah Inservice Teacher Efficacy Scale at the conclusion of their first year teaching. The beginning phraseology in each item was reworded to capture the perspective of a novice teacher, but was very similar to the Utah Preservice Teacher Efficacy Scale. For example, an item from the preservice scale reads, "I am prepared to evaluate reading materials for their usefulness and appropriateness for the students." This same item in the inservice scale reads, "I evaluate reading materials for their usefulness and appropriateness for the students."

The third research question, "How do these same individuals rate their feelings of preparedness and teacher self-efficacy after their first year of teaching?" sought to query inservice teachers about their feelings of teacher self-efficacy after they had taught in the classroom for one year. To analyze this question, descriptive data such as item means, standard deviations, scale means, scale standard deviations, and scale frequency distributions were reported for each item on the four subscales: (a) general knowledge and skills, (b) diversity and multicultural perspectives, (c) reading, (d) mathematics, and (e) assessment.

General Knowledge and Skills

The first subscale consisted of measuring the professional knowledge and skills of novice teachers at the conclusion of their first year teaching. Participants were asked to self report their feelings of confidence to teach regarding their general professional knowledge and skills on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consisted of fifteen items (see Table 14). As shown in the table, inservice teachers reported feeling generally "well prepared" in regards to their general knowledge and skills teaching efficacy with an overall item mean of 4.06. On average, the inservice teachers felt most confident in their abilities to teach basic knowledge and skills (see item 13); to use the state's core curriculum and performance standards to plan instruction (see item 11); and to maintain an orderly, purposeful learning environment (see item 7). Inservice teachers felt least confident in their abilities to use educational technology in instruction (see item 5) and to improve the academic performance of challenging and unmotivated students (see item 1).

The general knowledge and skills subscale score for inservice teachers (N = 125) had a scale mean of 60.88, a standard deviation of 6.87, and a range of 15-75 points. Cronbach's alpha reliability for this subscale was 0.819, indicating there was a strong correlation among all the items on the subscale.

Diversity and Multicultural Perspectives

The second subscale asked novice teachers to self-report their preparedness and teacher efficacy related to diversity and multicultural perspectives. Participants were asked to self-report their feelings of preparedness regarding diversity and

Table 14

Inservice Teachers' Reported General Knowledge and Skills Teacher Efficacy (N = 125*)*

Item (1 = Not at all to 5 = Very well)	Percentage							
	N/A	Not at all	Poorly	Adequately	Well	Very well	Mean	*SD*
1 - I improve the academic performance of challenging and unmotivated students.	0	0	7.4	34.8	41.5	16.3	3.67	0.84
2 - I tailor teaching and curriculum to individual students' needs.	0	0	5.2	32.8	43.3	18.7	3.75	0.82
3 - I develop curriculum that builds on students' experiences interests, and abilities.	0	0	1.5	17.6	33.1	47.8	4.27	0.80
4 - I relate classroom learning to the real world.	0.7	0	0	13.3	37.0	48.9	4.36	0.71
5 - I use educational technology in instruction.	0	3.0	16.3	29.6	26.7	24.4	3.53	1.1
6 - I choose different teaching strategies to meet the needs of the different ability levels of students.	0	0	2.2	25.2	45.9	26.7	3.97	0.78
7 - I maintain an orderly, purposeful learning environment.	0	1.5	1.5	11.0	27.2	58.8	4.40	0.85
8 - I engage students in cooperative work.	0	0	1.5	16.2	40.4	41.9	4.23	0.77
9 - I integrate subject matter knowledge, knowledge of learning, student development and curriculum to plan effective lessons.	0	0	2.2	25.7	41.9	30.1	4.00	0.81
10 -I create learning experiences that make the central concepts of the subject matter meaningful subjects.	0	0	1.5	20.9	50.7	26.9	4.03	0.74
11 - I use the state's core curriculum and performance standards to plan instruction.	0.8	0.8	1.5	7.5	35.3	54.1	4.42	0.76
12 - I motivate students to participate in academic tasks.	0	0.7	0.7	14.7	48.5	35.3	4.17	0.76
13 - I teach basic knowledge and skills.	0	0	0	6.7	41.8	51.5	4.45	0.62
14 - I refer students for special assistance when appropriate.	1.5	3.0	5.9	28.1	37.0	24.4	3.75	1.0
15 - I prepare students to be engaged citizens in a democracy.	0	1.5	5.2	28.1	35.6	29.6	3.87	0.95

multicultural perspectives on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consisted of nine items (see Table 15). As shown in the table, inservice teachers reported feeling "adequately prepared" in regards to their diversity and multicultural perspectives teaching efficacy with an overall item mean of 3.54. On average, the inservice teachers felt most confident in their abilities to encourage students to see, question, and interpret ideas from diverse perspectives (see item 8); to work with parents and families to help the teacher understand the students and understand their learning (see item 4); and to help parents understand their children and support their learning (see item 1). Inservice teachers felt least confident in their abilities to use community resources to create a multicultural curriculum (see item 3); to use knowledge about linguistic differences to create learning opportunities for students (see item 9); and to develop a curriculum that includes the perspectives, experiences, contributions of diverse cultural groups (see item 5).

The diversity and multicultural perspective subscale score for inservice teachers (N = 104) had a scale mean of 32.13, a standard deviation of 6.18, and a range of 9-45 points. Cronbach's alpha reliability for this subscale was 0.815, indicating there was a strong correlation among all the items on this subscale.

Reading

The third subscale consisted of measuring the feelings inservice teachers had at the conclusion of their first year teaching. Participants were asked to self-report on their feelings of efficacy to teach reading on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consists of thirteen items (see Table 16). As shown in the

Table 15

Inservice Teachers' Reported Diversity and Multicultural Perspectives Teacher Efficacy (N = 104)

Item (1 = Not at all to 5 = Very well)	Percentage							
	N/A	Not at all	Poorly	Adequately	Well	Very well	Mean	*SD*
1 – I help parents understand their children and support their learning.	0	0	7.4	38.2	36.8	17.6	3.65	0.86
2 - I implement strategies to help students from different cultures interact positively with each other.	0.7	9.6	8.1	25.2	34.1	22.2	3.51	1.2
3 - I use community resources to create a multicultural curriculum.	0.7	2.2	25.9	27.4	28.1	15.6	3.29	1.1
4 - I work with parents and families to help me understand students and support their learning.	0	0.7	5.9	36.0	29.4	27.9	3.78	0.95
5 - I develop a curriculum that includes the perspectives, experiences, contributions of different cultural groups.	0.7	1.5	12.5	39.7	33.8	11.8	3.42	0.91
6 - I teach in ways that support students learning English as a second language.	22.8	0.7	8.1	26.5	27.2	14.7	3.51	1.1
7 - I address the needs of students from diverse cultural backgrounds.	14.0	0.7	6.6	30.9	33.1	14.7	3.60	0.94
8 - I encourage students to see, question, and interpret ideas from diverse perspectives.	1.5	0.7	6.6	29.4	34.6	27.2	3.82	0.94
9 - I use knowledge about linguistic differences to create learning opportunities for students.	8.2	4.5	16.4	29.9	27.6	13.4	3.32	1.0

Table 16

Inservice Teachers' Reported Reading Teacher Efficacy (N = 126*)*

Item (1 = Not at all to 5 = Very well)	Percentage							
	N/A	Not at all	Poorly	Adequately	Well	Very well	Mean	*SD*
1 – I teach reading vocabulary (emphasizing word meaning).	2.2	2.2	7.5	19.4	33.6	35.1	3.86	0.93
2 – I teach oral reading.	1.5	1.5	8.2	27.6	39.6	21.6	4.00	0.92
3 - I help foster students' oral or written responses to literature.	5.2	0.7	9.0	28.4	36.6	20.1	3.76	0.99
4 - I teach silent reading.	0	0.7	2.9	23.5	40.4	32.4	4.17	1.0
5 - I use comprehension activities (e.g., discussion questions and assignments).	0	0	0	1.5	40.7	42.2	4.27	0.90
6 - I use instructional strategies to help children with their reading comprehension.	0	1.5	3.7	21.6	47.0	26.1	4.13	0.90
7 - I use a variety of reading assessments to determine students' strengths, needs, and progress.	0	0.7	11.1	33.3	34.1	20.7	3.73	0.97
8 - I teach reading to groups that are of mixed abilities.	2.9	0.7	9.6	25.7	38.2	22.8	3.70	1.1
9 – I evaluate reading materials for their usefulness and appropriateness for the students.	0	0	1.5	19.9	44.1	34.6	3.77	0.92
10 - I understand how children come to acquire reading and writing skills.	0	0	10.4	25.9	37.0	26.7	3.67	0.96
11 - I use the textbook as a resource in reading rather than as the primary instructional tool.	0	0	3.0	16.3	34.8	45.9	3.88	1.1
12 – I teach reading (oral or silent) during social studies science, or mathematics.	0	0	6.0	29.1	36.6	28.4	3.67	1.0
13 – I adapt reading instruction to accommodate students with special needs.	2.2	2.2	6.6	18.4	33.1	37.5	3.53	1.2

table, inservice teachers reported feeling slightly less than "well prepared" in regards to their reading teaching efficacy with an overall item mean of 3.86. The inservice teachers felt most confident in their abilities to use instructional strategies to help children with their reading comprehension (see item 5), to teach silent reading (see item 4), and to use instructional strategies to help children with their reading comprehension (see item 6). Inservice teachers felt least confident in their abilities to adapt reading instruction to accommodate students with special needs (see item 13); to teach reading (oral or silent) during social studies, science, or mathematics (see item 12); and to understand how children come to acquire reading and writing skills (see item 10).

The reading subscale score for inservice teachers (N = 126) had a scale mean of 49.26, a standard deviation of 8.9, and a range of 13-65 points. Cronbach's alpha reliability for this subscale was 0.889, indicating there was a strong correlation among all the items on this subscale.

Mathematics

The fourth subscale required that preservice teachers self report their feelings of efficacy to teach mathematics on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consisted of ten items (see Table 17). As shown in the table, inservice teachers reported feeling *mostly* "well prepared" in regards to their mathematics teaching efficacy with an overall item mean of 3.94. On average, the inservice teachers felt most confident in their abilities to teach mathematical representations (see item 2), to use manipulatives in mathematics (see item 8), and to teach connections among mathematical ideas (see item 6). Inservice teachers felt least confident in their abilities to

Table 17

Inservice Teachers' Reported Mathematics Teacher Efficacy (N = 128*)*

Item (1 = Not at all to 5 = Very well)	Percentage							
	N/A	Not at all	Poorly	Adequately	Well	Very well	Mean	*SD*
1 - I use mathematical problem solving processes in teaching. in teaching.	0.7	0	3.7	19.9	53.7	22.1	4.00	0.89
2 - I teach mathematical representations.	0.7	0.7	4.5	26.9	37.3	29.9	4.24	0.77
3 - I use mathematics communication processes in teaching.	0.7	0	0.7	14.1	50.4	34.1	3.91	0.93
4 - I integrate mathematics with other subject areas.	0	0	11.0	35.3	33.1	20.6	3.63	0.96
5 - I teach mathematical concepts to student groups that are mixed in ability.	0	0	11.0	35.3	33.1	20.6	3.69	1.0
6 - I teach connections among mathematical ideas.	0.7	0	14.0	31.6	39.7	14.0	4.12	0.77
7 - I use discovery approaches in mathematics.	0.7	0	5.2	21.5	47.4	25.2	3.80	0.95
8 - I use manipulatives in mathematics.	0	0	0	21.3	54.4	24.3	4.24	0.83
9 - I take into account students' prior conceptions about mathematics when planning curriculum and instruction.	15.4	1.5	11.8	22.8	30.1	18.4	3.87	0.89
10 - I use the textbook as a resource rather than as the primary instructional tool.	0	0	8.8	23.5	36.0	31.6	3.93	1.1

integrate mathematics with other subject areas (see item 4), to teach mathematical concepts to student groups that are mixed in ability (see item 5), and to use discovery approaches in mathematics (see item 7).

The mathematics subscale score for inservice teachers (N = 128) had a scale mean of 39.40, a standard deviation of 6.14, and a range of 10-50 points. Cronbach's alpha reliability for this subscale was 0.857, indicating there was a strong correlation among all the items on this subscale.

Assessment

The fifth subscale contained questions about how confident novice teachers felt about using assessment practices in their classroom. Participants were asked to self-report their feelings of preparedness to assess students on a Likert scale ranging from "1 = not at all" to "5 = very well." This subscale consists of ten items (see Table 18). As shown in this table, inservice teachers reported feeling *slightly less than* "well prepared" in regard to being confident in their abilities to align assessments with expectations of what students should know and be able to do (see item 3), to analyze student work in order to assess and modify their own teaching (see item 5), and to monitor students' progress and adjust instruction accordingly (see item 8). Inservice teachers felt least confident in their abilities to use alternative assessment practices (see item 6), to use state core test results to inform instructional planning (see item 9), and to assess higher level objectives (see item 4).

The assessment subscale score for both inservice teachers (N = 113) had a mean of 38.37, a standard deviation of 6.38, and a range of 10-50 points. Cronbach's alpha

Table 18

Inservice Teachers' Reported Assessment Teacher Efficacy (N = 113*)*

Item (1 = Not at all to 5 = Very well)	N/A	Percentage					Mean	*SD*
		Not at all	Poorly	Adequately	Well	Very well		
1 - I evaluate if students are learning.	0	0.7	5.2	27.6	39.6	26.9	3.92	0.83
2 - I use standardized assessments to guide decisions about skills, concepts, and processes to teach.	1.5	0	4.5	20.9	40.3	32.8	3.89	0.96
3 - I align assessments with expectations of what students should know and be able to do.	1.5	0	8.1	24.4	43.0	23.0	4.16	0.78
4 - I assess higher level objectives.	3.0	1.5	3.0	17.0	28.9	46.7	3.63	0.93
5 - I analyze student work in order to assess and modify my own teaching.	0.7	0	2.2	16.4	29.9	50.7	3.97	0.84
6 - I use alternative assessment practices.	0.8	0	3.8	15.8	40.6	39.1	3.52	0.93
7 - I use student assessments to guide decisions about what skills concepts, and processes to teach.	0.7	0	7.5	33.6	33.6	24.6	3.90	0.89
8 - I monitor students' progress and adjust instruction accordingly.	3.7	3.7	6.7	24.6	36.6	24.6	4.03	0.68
9 - I use state core test results to inform instructional planning.	1.5	0.7	4.5	30.6	40.3	22.4	3.59	1.0
10- I create assessments that prepare my students to be successful in taking core tests.	0.7	0.7	8.1	31.1	39.3	20.0	3.92	0.95

reliability for this subscale was 0.843, indicating there was a relatively strong correlation among all the items on this subscale. In summary, the inservice teachers in this study overall felt *mostly* "well prepared" and had relatively high teacher self-efficacy in the areas of general knowledge and skills, reading, mathematics, and assessment. In the area of diversity and multicultural perspectives, inservice teachers reported lower feelings of efficacy with more participants rating themselves as "adequately prepared."

In comparison to their preservice counterparts, inservice teachers reported lower means in all five areas of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment. Inservice teachers generally fell in the *slightly below* "well prepared" category while preservice teachers ranked themselves generally as "well prepared." The only exception to this was diversity and multicultural perspectives. Inservice teachers and preservice teachers both felt least confident in their teaching abilities in this area ranking these items lower than items on other scales.

Research Question Four

The fourth research question was, "What school context variables are associated with the perceptions and feelings of inservice teacher self-efficacy?" Each elementary school or district is unique and provides a variety of professional development and mentoring experiences for novice teachers at their school and in their district. This research question sought to determine if there was a relationship between how novice teachers *perceived* the usefulness of the professional development and the helpfulness of the mentoring support with the level of teacher efficacy they reported. There were two variables used for this analysis.

The first variable was professional development. This variable was continuous and included 14 items. Inservice teachers were asked to report the usefulness of the professional development opportunities they received on a Likert scale ranging from "1 = not useful" to "5 = extremely useful." If there was no professional development support provided on a specific item, participants reported a 0 for "Did Not Occur."

The overall scale mean for professional development (N = 120) was 29.68, with a standard deviation of 14.27, and a range of 0-70 points. Cronbach's alpha reliability for this subscale was 0.920, indicating there was a strong correlation among all the items on this subscale.

The second variable was mentoring support. This variable was continuous and included fifteen items. Inservice teachers were asked to report the helpfulness of the mentoring support they received on a Likert scale ranging from "1 = not helpful" to "5 = extremely helpful." If there was no mentoring support provided on a specific item, participants reported a 0 for "Did Not Occur."

The overall scale mean for mentoring support (N = 133) was 46.17, with a standard deviation of 23.46, and a range of 0-75 points. Cronbach's alpha reliability for this subscale was 0.969, indicating there was a strong correlation among all the items on this subscale.

Descriptive statistics for perceived usefulness of professional development opportunities and perceived helpfulness of mentoring support were reported in Tables 19 and 20. These data help in the interpretation of the bivariate correlation that follows. Included in the table were the frequencies of the various types of professional

Table 19

Inservice Teachers' Reported Perceived Usefulness of Professional Development Descriptive Statistics (N = 136)

Item	Percentage						
(1 = Not useful to 5 = Extremely useful)	Did not occur	Not useful	Minimally useful	Somewhat useful	Very useful	Extremely useful	Mean/*SD*
I have received professional development support to help me…							
1- manage the classroom more effectively.	33.3	0.8	5.3	21.2	23.5	15.9	3.73/0.956
2 – use teaching strategies designed for diverse learners.	36.4	2.3	10.9	19.4	20.9	10.1	3.40/1.06
3 – better understand mathematics content.	38.5	0.8	3.8	19.2	20.0	17.7	3.81/0.969
4 – use a wider repertoire of strategies to help my students learn mathematics.	42.2	0	3.1	16.4	24.2	14.1	3.85/0.855
5 – better understand the language and literacy processes.	15.4	0.8	8.5	13.1	38.5	23.8	3.90/0.957
6 - use a wider repertoire of strategies to help my students develop as readers.	21.8	1.5	6.8	18.0	26.3	25.6	3.87/1.03
7 – align my teaching to the state's curriculum standards and performance standards in reading.	36.2	0.8	3.9	21.3	19.7	18.1	3.79/0.971
8 - align my teaching to the state's curriculum standards and performance standards in mathematics.	44.4	1.6	3.2	14.5	21.0	15.3	3.81/1.00
9 - use technologies more effectively.	58.0	0.8	5.3	13.0	13.7	9.2	3.60/1.02
10- use a broader range of assessment tools.	53.9	3.1	5.5	18.0	12.5	7.0	3.32/1.09
11- use teaching methods that can be applied across subjects such as cooperative learning.	52.7	0.8	3.1	15.5	19.4	8.5	3.67/0.908
12- address the needs of students with disabilities.	75.8	0.8	3.9	7.8	4.7	7.0	3.55/1.17
13- address the needs of English Language Learners (ELLS) students.	67.2	2.3	3.1	13.7	6.1	7.6	3.42/1.16
14- prepare my students for standardized testing.	45.4	1.5	6.9	14.6	21.5	10.0	3.58/1.02

Table 20

Inservice Teachers' Reported Perceived Helpfulness of Mentoring Support Descriptive Statistics (N = 136)

Item (1 = Not helpful to 5 = Extremely helpful)	Percentage						
	Did not occur	Not helpful	Minimally helpful	Somewhat helpful	Very helpful	Extremely helpful	Mean/*SD*
My mentor…							
1- worked to improve my self-efficacy.	15.7	1.5	10.4	14.9	30.6	26.9	3.84/1.07
2 - modeled effective techniques for classroom management.	24.6	2.2	9.0	14.2	26.9	23.1	3.79/1.10
3 - encouraged making self-assessment of teaching practices.	26.9	3.0	6.7	21.6	22.4	19.4	3.66/1.09
4 - gave formal and informal feedback about teaching methods.	21.6	2.2	8.2	12.7	27.6	27.6	3.90/1.09
5 - modeled communication and collaboration with colleagues.	23.9	2.2	6.0	16.4	23.1	28.4	3.91/1.08
6 - encouraged me during periods of self-doubt.	14.8	2.2	1.5	15.6	19.3	46.7	4.25/0.99
7 – modeled effective techniques of instruction.	25.9	2.2	4.4	11.9	22.2	33.3	4.08/1.06
8 - helped me work toward my own solutions.	17.8	3.0	5.9	14.8	28.1	30.4	3.94/1.08
9 - gave informal feedback about classroom management.	18.5	3.0	6.7	16.3	24.4	31.1	3.91/1.11
10- provided a link or bridge to existing school culture.	26.1	2.2	6.0	17.2	21.6	26.9	3.88/1.09
11- was a good listener.	7.4	0.7	8.9	9.6	19.3	54.1	4.26/1.04
12- assisted with teaching content and planning units.	31.9	2.2	5.9	11.1	20.00	28.9	3.99/1.11
13- modeled reflective teaching by examining and questioning teaching practices.	25.2	3.7	8.1	16.3	20.0	26.7	3.77/1.19
14- gave informal feedback about planning and knowledge of content.	23.7	3.7	5.2	16.3	24.4	26.7	3.85/1.12
15- modeled professional behavior when communicating with parents.	24.4	1.5	5.9	11.1	20.0	37.0	4.13/1.06

development and mentoring support provided to novice teachers.

The overall item mean for professional development was 3.66, indicating that when they received professional development, inservice teachers reported the professional development as *slightly more* than "somewhat useful." The most frequently reported types of professional development were on topics related to better understanding the language and literacy processes (see item 5), using a wider repertoire of strategies to help my students develop as readers (see item 6), and managing the classroom more effectively (see item 1). These three items had means of at least 3.73, which is close to the "very useful" category.

The professional development topics where at least 50% of the inservice teachers reported as not occurring were item 12 – addressing the needs of students with disabilities (75.8%), item 13 – addressing the needs of English Language Learners (67.2%), item 9 – using technologies more effectively (58%), and item 10 – using a broader range of assessment tools (53.9%). These findings about the lack of professional development available for novice teachers in assisting students with disabilities or English Language Learners is consistent with the areas in which inservice teachers reported the lowest scores of teacher efficacy.

The overall item mean for mentoring support was 3.94, indicating that when they received mentoring support, inservice teachers reported this support as *mostly* "very helpful." The most frequently reported types of mentoring support were the mentor being a good listener (see item 11), the mentor being encouraging during periods of self doubt (see item 6), and the mentor working to improve the self-efficacy of the novice teacher

(see item 1). These three items fell into the “very helpful” category.

It should be noted that more mentoring support was reported by inservice teachers than professional development. However, at least 25% of the inservice teachers reported that the following types of mentoring support were not provided: item 12 – my mentor assisted with teaching content and planning units (31.9%), item 10 – my mentor provided a link or a bridge to the existing school culture (26.1%), item 7 – my mentor modeled effective techniques of instruction (25.9%), and item 13 – my mentor modeled reflective teaching by examining and questioning teaching practices (25.2%).

Inferential statistics were used to analyze the relationship between perceived usefulness of professional development, perceived helpfulness of mentoring support, and inservice teacher efficacy. Because the professional development variable and the mentoring support variable were both continuous variables, a bivariate correlation was used to determine this relationship. Table 21 shows the weak, but positive correlation between professional development, mentoring support, and inservice teacher efficacy.

Table 21

Correlation between Professional Development, Mentoring Support, and Inservice Teachers’ Efficacy (N = 136*)*

Variable	Professional development	Mentoring support
Inservice teacher efficacy	0.284**	0.246**
Professional development	--	0.326**

**correlation is significant at the 0.01 level (2-tailed).

Results of this analysis indicate that there is a small but positive correlation between the perceived helpfulness of the professional development that inservice teachers receive and their feelings of teacher efficacy. This correlation coefficient was found to be statistically significant. These results suggest that professional development and mentoring support, if perceived as helpful and/or useful, are related to higher inservice teacher efficacy.

Research Question Five

The final question in this research study sought to determine if feelings of preparedness and teacher efficacy changed from the preservice stage to the inservice stage. By tracking preservice teachers into their inservice assignments, program variables such as type of student teaching placement, number of student teaching placements, and number of literacy methods courses could be examined as they relate to teacher efficacy. Do program differences have a lasting impact? Does the feeling of efficacy that a teacher has at the end of the teacher preparation program stay with this teacher as he/she begins teaching in the classroom?

The researcher sought to answer these questions using the following research query: "In what ways do perceptions of inservice teachers change after a year of teaching?" Participants were asked to report the last four digits of their social security number as well as their birth month and college. This information was used to create matched participants from the preservice teacher sample (N = 543) to the inservice teacher sample (N = 136). When all matches were located, 246 matching social security numbers and birth months were identified, meaning there were 123 individuals from the

original sample of 136 inservice teachers that had both preservice and inservice data available for this comparison.

For this analysis, a repeated measures analysis of variance was used to determine changes over time in teacher efficacy for the matched participants. The within-subjects factors used for the repeated measures analysis of variance was the global factor of teacher efficacy and the five first-order factors including general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment. The between-subjects variables were the teacher preparation program variables including type of student teaching, number of student teaching placements, and the number of literacy methods courses. Descriptive statistics for the global factor and five first-order factors are presented in Table 22. These data help in the interpretation of the Repeated Measures ANOVAs that follow.

The partial eta^2 statistic generated by the SPSS software was used as an effect size measure in this analysis to determine the statistical and practical significance of its findings. The meaning and interpretation of partial eta^2 is somewhat dependent on the nature of the design used to collect and analyze the data. The two-factor, repeated measures ANOVA design used in the present study included one between-subjects factor (here called Factor A) and one within-subjects factor (Factor B). Factor A involved a comparison between two independent groups of prospective teachers (e.g., teachers who had participated in a traditional student teaching assignment and teachers who completed an internship in lieu of student teaching). The two levels of Factor B consisted of two different measurement occasions. The same group of teachers responded to the questions

Table 22

Descriptive Data for Preservice and Inservice Teacher Efficacy of Matched Participants

Program variable	Preservice			Inservice	
	n	mean	*SD*	mean	*SD*
Global factor					
Student teaching	49	233.65	32.20	228.24	26.84
Internship	13	223.62	36.41	218.77	23.27
One placement	37	232.54	33.79	230.63	24.79
Two placements	24	230.63	33.10	222.96	28.99
Two literacy courses	25	218.64	32.78	219.24	27.16
Three literacy courses	38	240.79	30.45	229.82	25.58
General knowledge and skills					
Student teaching	89	61.63	7.90	60.82	7.21
Internship	24	59.75	10.92	60.13	5.65
One placement	67	61.45	9.16	61.19	6.79
Two placements	44	60.86	7.82	59.89	7.14
Two literacy courses	48	59.73	7.83	60.54	7.36
Three literacy courses	66	62.36	8.98	60.63	6.57
Diversity and multicultural perspectives					
Student teaching	72	33.96	6.98	32.94	5.91
Internship	18	31.22	8.08	31.28	5.37
One placement	54	32.61	7.20	34.53	6.00
Two placements	34	34.53	7.43	33.12	5.68
Two literacy courses	38	32.42	6.70	31.66	6.28
Three literacy courses	53	34.21	7.55	33.19	5.42

(table continues)

Program variable	Preservice			Inservice	
	n	mean	*SD*	mean	*SD*
Reading					
Student teaching	85	53.00	9.87	51.05	7.58
Internship	24	52.33	8.52	49.38	9.37
One placement	68	51.74	10.12	50.61	8.15
Two placements	39	53.87	8.67	50.74	7.87
Two literacy courses	45	48.95	9.88	48.82	8.27
Three literacy courses	65	55.00	8.49	51.77	8.04
Mathematics					
Student teaching	84	41.35	7.31	39.48	6.20
Internship	24	39.04	6.81	40.21	5.45
One placement	67	41.63	6.52	40.06	5.67
Two placements	39	39.46	8.38	38.85	6.63
Assessment					
Student teaching	76	41.38	6.37	39.00	6.42
Internship	22	39.55	8.90	36.91	6.00
One placement	61	40.74	7.82	38.57	6.06
Two placements	36	41.33	5.58	38.42	6.98
Two literacy courses	44	40.11	6.84	38.34	6.41
Three literacy courses	55	41.82	7.15	38.47	6.35

in the questionnaire on each of these two different occasions. Hence, Factor B is considered to be a repeated measures or within-subjects factor.

In a two-factor design that includes one between-subjects variable (Factor A) and one repeated measures variable (Factor B), the total variability is first partitioned into two major components:

1. Between-subjects variability

2. Within-subjects variability

Each of these two main components is then further subdivided into additive parts. The total between-subjects variability is partitioned into two subparts as follows:

a. Variability due to differences between groups of subjects (Factor A), and

b. Variability due to differences between subjects in the same group.

Similarly, the total within-subjects variability is subdivided into three subcomponents:

c. Differences in the levels of the repeated measures factor (Factor B),

d. The interaction of Factor B with Factor A.

e. The residual or unexplained variability.

Two partial eta^2 statistics can be computed for each dependent variable included in a study using this design: one for Factor A (the between-subjects factor), and another for Factor B (the within-subjects factor). The partial eta^2 for Factor A is computed by dividing the sum of squares for that factor (SS_A) by the total between subjects sum of squares ($SS_{Between\ Subjects}$). Using the data from Table 23 as an example, the partial eta^2 statistic for the Between Subjects Factor for this particular variable is 8074.569 divided by (8074.569 + 75176.859) which equals 0.097.

Similarly, the partial eta^2 statistic for the within subjects factor in Table 23 is computed by dividing SS_B by ($SS_B + SS_{A*B} + SS_{Error}$) which equals 811.37 divided by (811.37 + 1009.942 + 26847.487).

Since the value of the sum of squares for a factor can never be negative, the smallest possible value of the resulting effect size measure is zero which could occur only if the sum of squares statistic for the numerator of this statistic was negative. Similarly,

Table 23

Repeated Measures ANOVA of Number of Literacy Methods Courses and Preservice and Inservice Teacher Efficacy in Global Factor

Source	*SS*	*df*	*MS*	*F*	*p*	Partial eta^2
Between subjects (number of literacy methods courses)						
Factor A	8074.569	1	8074.569	6.552	0.013	0.097
Error	75176.859	61	1232.408			
Within subjects (time)						
Factor B	811.370	1	811.370	1.844	0.180	
A * B	1009.942	1	1009.942	2.295	0.135	
Error	26847.487	61	440.123			

neither SS_A or SS_B can ever take a value larger than its corresponding total sum of squares. Hence, the value of partial eta^2 can never exceed 1.0. Therefore, each partial eta^2 should be interpreted as a proportion that can take any value between zero and +1.0.

When a partial eta^2 statistic is computed for Factor A, the effect of Factor B is removed or partialled out. Conversely, when the effect of Factor B is estimated, the effect of Factor A is removed. The partial eta^2 statistic for Factor A (the Between Subjects factor in this design) indicates what proportion of the Total Between Subjects variability of a particular dependent variable is accounted for or explained by the effect of Factor A. Similarly, the partial eta^2 value for Factor B (the Within Subjects factor) can be interpreted as the proportion of the Total Within Subjects variability that can be accounted for or explained by variability in the levels of Factor B.

Partial eta^2 is somewhat analogous to R^2 in the sense that it provides an estimate

of the degree of association between an independent variable and a dependent variable. Again, Cohen (1988) provided guidelines for interpreting partial eta^2 based on a survey of the research literature. He suggested that partial eta^2 values of .01 are indicative of a small effect, .06 is indicative of a medium effect, and .15 is indicative of a large effect.

Global Factor

Type of student teaching. The results of the Repeated Measures ANOVA on the global factor for the type of student teaching (student teacher or intern) variable was not statistically significant for the grouping factor, $F(1,60) = 1.445$, $p = .234$, for the time factor, $F(1,60) = 1.269$, $p = .264$, or for the interaction, $F(1,60) = .004$, $p = .951$.

Number of student teaching placements. The results of the Repeated Measures ANOVA on the global factor for the number of student teaching placements (one placement or two placements) variable was not statistically significant for the grouping factor, $F(1,59) = .301$, $p = .585$, for the time factor , $F(1,59) = 2.257$, $p = .138$, or for the interaction, $F(1,59) = .241$, $p = .625$.

Number of literacy methods courses. The results of a repeated measures analysis of variance for the number of literacy methods courses showed a statistically significant main effect for group factor, $F(1,61) = 6.552$, $p = .013$ (see Table 23). There was not a statistically significant effect for the time factor, $F(1,61) = 1.844$, $p = .180$, or for the interaction, $F(1,61) = 2.295$, $p = .135$. The partial eta^2 effect size for number of literacy methods courses group factor was moderate at 0.097. Figure 3 illustrates that preservice teachers with three literacy methods courses scored higher means than those with two at both the preservice and inservice trials, though time was not statistically significant.

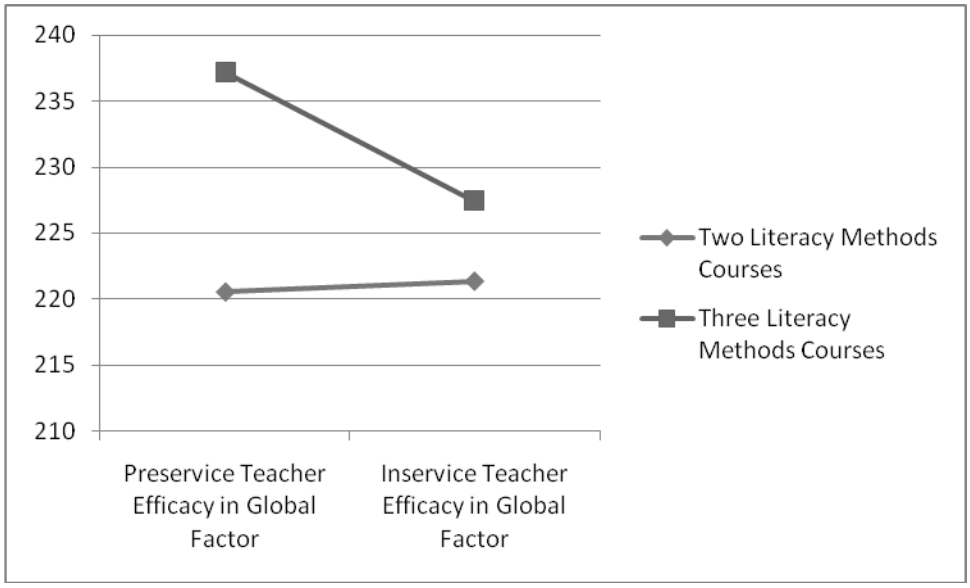

Figure 3. Line graph of number of literacy methods courses and preservice and inservice means.

Figure 3 also illustrates that preservice teachers with only two literacy methods courses had slightly increasing means, but that these means remained below those of preservice teachers with three literacy methods courses.

General Knowledge and Skills

Type of student teaching. The results of the repeated measures ANOVA on the general knowledge and skills factor for the type of student teaching (student teacher or intern) variable was not statistically significant for type of student teaching group, $F(1,111) = .779$, $p = .379$, for the time, $F(1,111) = .043$, $p = .837$, or for the interaction, $F(1,111) = .318$, $p = .574$.

Number of student teaching placements. The results of the repeated measures ANOVA on the general knowledge and skills factor for the number of student teaching

placements (one placement or two placements) variable was not statistically significant for the number of student teaching placements group, $F(1,109) = .590$, $p = .444$, for time, $F(1,109) = .475$, $p = .492$, or for the interaction, $F(1,109) = .164$, $p = .686$.

Number of literacy methods courses. The results of the Repeated Measures ANOVA on the general knowledge and skills factor for the number of literacy methods courses (two or three literacy methods courses) variable was not statistically significant for number of literacy methods courses group, $F(1,112) = 1.349$, $p = .248$, for time, $F(1,112) = .256$, $p = .614$, or for the interaction, $F(1,112) = 2.111$, $p = .149$.

Diversity and Multicultural Perspectives Factor

Type of student teaching. The results of the Repeated Measures ANOVA on the diversity and multicultural perspectives factor for the type of student teaching (student teacher or intern) variable was not statistically significant for type of student teaching group, $F(1,88) = 2.467$, $p = .120$, for time, $F(1,88) = .227$, $p = .635$, or for the interaction, $F(1,88) = .283$, $p = .596$.

Number of student teaching placements. The results of the Repeated Measures ANOVA on the diversity and multicultural perspectives factor for the number of student teaching placements (one placement or two placements) variable was not statistically significant for number of student teaching placements $F(1,86) = 1.230$, $p = .271$, for time, $F(1,86) = .934$, $p = .337$, or for the interaction, $F(1,86) = .522$, $p = .472$.

Number of literacy methods courses. The results of the Repeated Measures ANOVA on the diversity and multicultural perspectives factor for the number of literacy

methods courses (two or three literacy methods courses) variable was not statistically significant for number of literacy methods courses, $F(1,89) = 2.169$, $p = .144$, for time, $F(1,89) = 1.194$, $p = .277$, or for the interaction, $F(1,89) = .025$, $p = .876$.

Reading

Type of student teaching. The results of a repeated measures analysis of variance show a statistically significant main effect for time, $F(1,107) = 4.285$, $p = .041$, and no effect for type of student teaching (see Table 24). The partial eta^2 effect size for time was small at 0.039. There was no significant interaction effect between time and type of student teaching. While students who had student teaching placements scored higher than interns at both the preservice and inservice trials, type of student teaching was not statistically significant. Figure 4 illustrates that both the student teacher group and the intern group had declining self-efficacy scores from completion of their preservice

Table 24

Repeated Measures ANOVA of Type of Student Teaching and Preservice and Inservice Teacher Efficacy in Reading

Source	*SS*	*df*	*MS*	*F*	*p*	Partial eta^2
Between subjects (type of student teaching)						
Factor A	32.248	1	32.348	0.285	0.594	
Error	12102.926	107	113.11			
Within subjects (time)						
Factor B	183.556	1	183.556	4.285	0.041	0.039
A * B	20.712	1	20.712	0.484	0.488	
Error	4583.067	107	42.832			

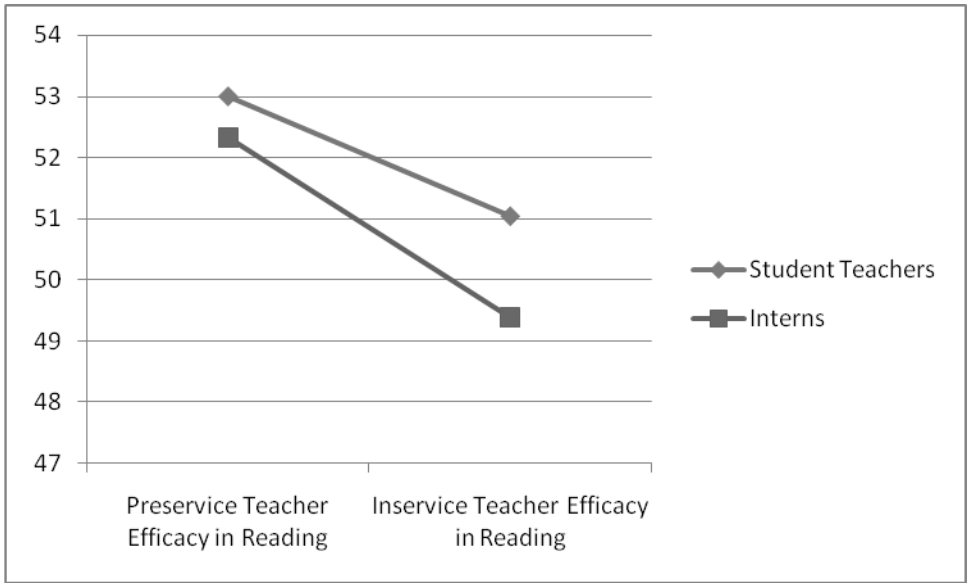

Figure 4. Line graph of type of student teaching and preservice and inservice means.

teaching to completion of their first year of inservice teaching.

Number of student teaching placements. The results of a repeated measures analysis of variance show a statistically significant main effect for time, $F(1,105) = 5.189$, $p = .025$, and no effect for number of student teaching placements (see Table 25).

There was no significant interaction effect between time and number of student teaching placements. Figure 5 illustrates that both the one placement student teaching group and the two placement student teaching group had declining self-efficacy scores from completion of their preservice teaching to completion of their first year of inservice teaching. The partial eta^2 effect size for time was small to medium at 0.047. While students who had two student teaching placements scored higher than interns at the preservice trial, the number of student teaching placements was not statistically significant. Figure 5 shows that the student teaching placement groups became more like each other as they gained more experience.

Table 25

Repeated Measures ANOVA of Number of Student Teaching Placements and Preservice and Inservice Teacher Efficacy in Reading

Source	*SS*	*df*	*MS*	*F*	*p*	Partial eta^2
Between subjects (number of student teaching placements)						
Factor A	63.433	1	63.433	0.555	0.458	
Error	12006.380	105				
Within subjects (time)						
Factor B	223.403	1	223.403	5.189	0.025	0.047
A * B	50.095	1	50.095	1.164	0.283	
Error	4520.709	105	43.054			

Number of literacy methods courses. The results of a repeated measures analysis of variance for the number of literacy methods courses show a statistically significant main effect for number of literacy methods courses, $F(1,108) = 10.472$, $p = .002$, and no effect for time (see Table 26). There was no significant interaction effect between time and number of literacy methods courses. The partial eta^2 effect size for number of literacy methods courses group was moderate at 0.088. Figure 6 illustrates that preservice teachers who had three literacy methods courses scored higher means than those with two at both the preservice and inservice trials. Time was not statistically significant. Figure 6 also illustrates that preservice teachers with only two literacy methods courses retained relatively the same mean score at both the preservice and inservice trials. Those with three literacy methods courses had decreasing means but were able to maintain higher mean scores than those with only two literacy methods courses.

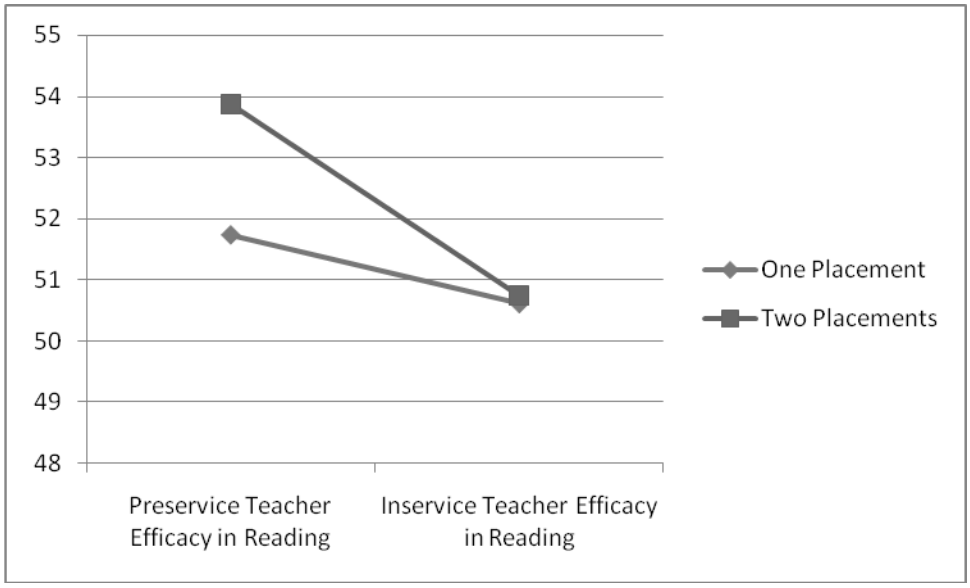

Figure 5. Line graph of number of student teaching placements and preservice and inservice means.

For the mathematics factor, only the type of student teaching variable and the number of student teaching placements variable were incorporated in the analysis. From a theoretical perspective, the number of literacy methods courses did not seem to fit the purpose of the analysis with teacher efficacy scores in mathematics.

Type of student teaching. The results of the Repeated Measures ANOVA on the mathematics factor for the type of student teaching (student teacher or intern) variable was not statistically significant for type of student teaching group, $F(1,106) = .402$, $p = .528$, for time, $F(1,106) = .148$, $p = .701$, or for the interaction, $F(1,106) = .2.773$, $p = .099$.

Mathematics

Number of student teaching placements. The results of the Repeated Measures

Table 26

Repeated Measures ANOVA of Number of Literacy Methods Courses and Preservice and Inservice Teacher Efficacy in Reading

Source	*SS*	*df*	*MS*	*F*	*p*	Partial eta^2
Between subjects (number of literacy methods courses)						
Factor A	1074.887	1	1074.887	10.472	0.002	0.088
Error	11085.658	108	102.645			
Within subjects (time)						
Factor B	150.467	1	150.467	3.502	0.064	
A * B	127.558	1	127.558	2.969	0.088	
Error	4640.369	108	42.966			

ANOVA on the mathematics factor for the number of student teaching placements (one placement or two placements) variable was not statistically significant for number of student teaching placements, $F(1,104) = 2.459$, $p = .120$, for time, $F(1,104) = 1.844$, $p = .177$, or for the interaction, $F(1,104) = .351$, $p = .555$.

Assessment

Type of student teaching. The results of a repeated measures analysis of variance show a statistically significant main effect for time, $F(1,96) = 7.936$, $p = .006$, and no effect for type of student teaching (see Table 27). The partial eta^2 effect size for time was medium at 0.076. There was no significant interaction effect between time and type of student teaching. While students who had student teaching placements scored higher than interns at both the preservice and inservice trials, type of student teaching was not

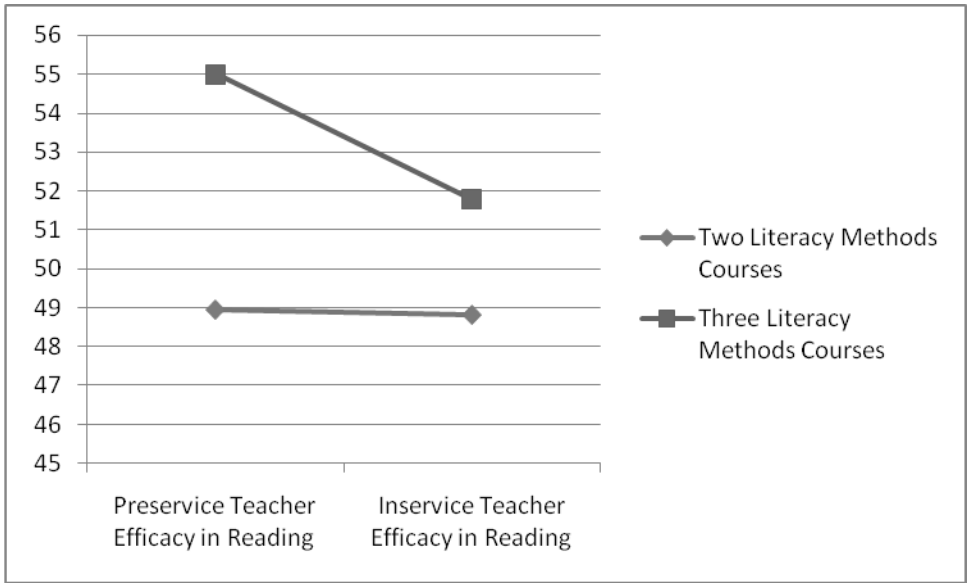

Figure 6. Line graph of number of literacy methods courses and preservice and inservice means.

statistically significant. Figure 7 illustrates that both the student teacher group and the intern group had declining self-efficacy scores from completion of their preservice teaching to completion of their first year of inservice teaching.

Number of student teaching placements. The results of a repeated measures analysis of variance show a statistically significant main effect for time, $F(1,95) = 10.707$, $p = .001$, and no effect for number of student teaching placements (see Table 28). There was no significant interaction effect between time and number of student teaching placements. Figure 8 illustrates that both the one placement student teaching group and the two placement student teaching group had declining self-efficacy scores from completion of their preservice teaching to completion of their first year of inservice teaching. The partial eta^2 effect size for time was moderately large at 0.101. Students who had two student teaching placements scored higher than interns at the preservice trial, but

Table 27

Repeated Measures ANOVA of Type of Student Teaching and Preservice and Inservice Teacher Efficacy in Assessment

Source	*SS*	*df*	*MS*	*F*	*p*	Partial eta^2
Between subjects (type of student teaching)						
Factor A	131.556	1	131.556	2.124	0.148	
Error	5946.694	96	61.945			
Within subjects (time)						
Factor B	214.699	1	214.699	7.936	0.006	0.076
A * B	0.554	1	0.554	0.020	0.887	
Error	2598.513	96	27.068			

as Figure 8 shows, the student teaching placement groups became more like each other as they gained more experience.

Number of literacy methods courses. The results of a repeated measures analysis of variance show a statistically significant main effect for time, $F(1,97) = 11.109$, $p = .001$, and no effect for number of literacy methods courses (see Table 29). There was no significant interaction effect between time and number of literacy methods courses. Figure 9 illustrates that both the two literacy methods group and the three literacy methods group had declining self-efficacy scores from completion of their preservice teaching to completion of their first year of inservice teaching. The partial eta^2 effect size for time was moderate to large at 0.103. While students who had three literacy methods courses scored higher than those with only two literacy methods courses at the preservice

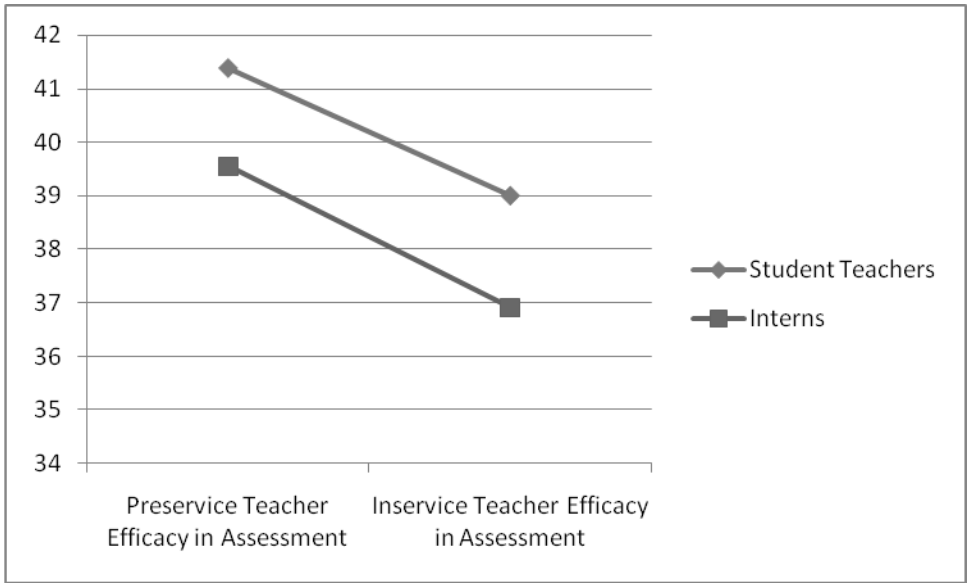

Figure 7. Line graph of type of student teaching and preservice and inservice means.

trial, but as Figure 9 shows, the number of literacy methods groups became more like each other as they gained more experience.

As the findings for this research question demonstrate, teacher efficacy decreased over time. Preservice program variables, with the exception of literacy methods courses, had no significant long-term effect on teacher efficacy.

Summary

Chapter four shares the results for each of the research questions. Research question one sought to determine the efficacy of preservice teachers throughout the state of Utah during one academic school year. It was determined that overall, preservice teachers had high feelings of efficacy and preparedness. Preservice teachers in this study overall felt "well prepared" and had relatively high teacher self-efficacy in the areas of general knowledge and skills, reading, mathematics, and assessment. Preservice teachers

Table 28

Repeated Measures ANOVA of Number of Student Teaching Placements and Preservice and Inservice Teacher Efficacy in Assessment

Source	*SS*	*df*	*MS*	*F*	*p*	Partial eta^2
Between subjects (number of student teaching placements)						
Factor A	2.177	1	2.177	0.034	0.854	
Error	6072.916	95	63.925			
Within subjects (time)						
Factor B	292.187	1	292.187	10.707	0.001	0.101
A * B	6.414	1	6.414	0.235	0.629	
Error	2592.555	95	27.290			

reported lower feelings of teacher efficacy in the area of diversity and multicultural perspectives. For these items, preservice teachers ranked themselves as "adequately" to "well prepared."

These high feelings of efficacy for preservice teachers support and reinforce the findings and studies presented in the literature review (Darling-Hammond, 2006; Fives et al., 2007; Helfrich, 2007; Knoblauch & Woolfolk Hoy, 2008; Shaw et al., 2007; Woolfolk Hoy & Burke Spero, 2005; Zientek, 2007) that also found teacher efficacy to be high for preservice teachers at the end of their teacher preparation program.

Research question two sought to determine how program variables impacted these feelings of teacher efficacy. The first analysis was for the global factor. When the efficacy scores of preservice teachers were aggregated into two groups of either intern or traditional student teacher, the student teacher had statistically significant higher means

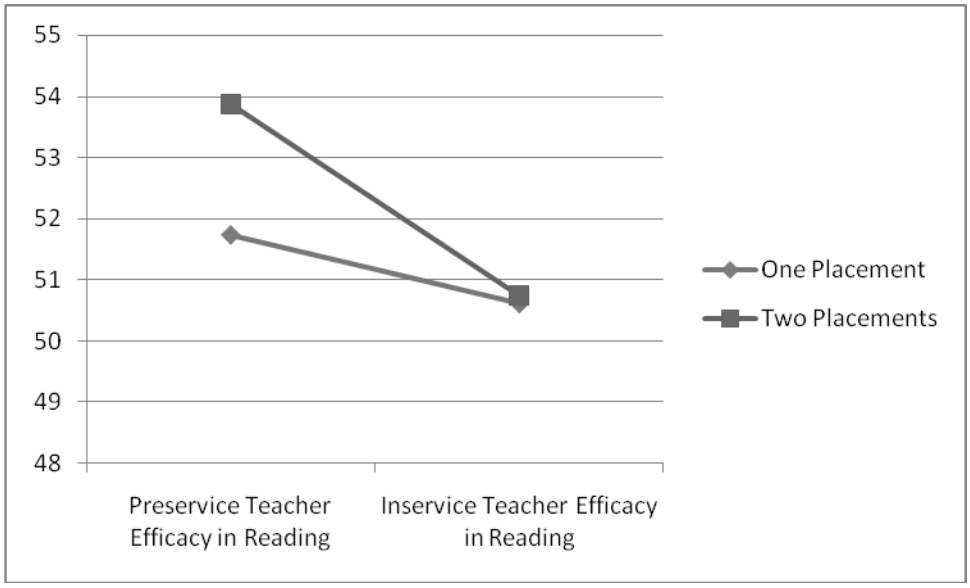

Figure 8. Line graph of number of student teaching placements and preservice and inservice means.

than the interns, but the effect size was low. Student teachers with one placement reported statistically significant higher means than those with two placements, but with a low effect size. Preservice teachers that had three literacy methods reported higher feelings of efficacy than those with only two, and this time, the effect size was medium to large.

Findings were fairly similar when analyzing program variables more specifically with the first-order factors of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment. Student teachers had statistically significant higher means than interns for diversity and multicultural perspectives and mathematics, but the effect sizes were low. One placement student teachers had statistically significant higher means than two placement student teachers for general knowledge and skills, mathematics, and assessment, but the effect sizes were statistically

Table 29

Repeated Measures ANOVA of Number of Literacy Methods Courses and Preservice and Inservice Teacher Efficacy in Assessment

Source	*SS*	*df*	*MS*	*F*	*p*	Partial Eta^2
Between subjects (number of literacy methods courses)						
Factor A	46.259	1	46.259	0.743	0.391	
Error	6038.055	97	62.248			
Within subjects (time)						
Factor B	306.668	1	306.668	11.109	0.001	0.103
A * B	26.183	1	26.183	0.948	0.333	
Error	2677.827	97	27.606			

significant. Preservice teachers with three literacy methods courses had statistically significant higher means than those with only two literacy methods courses on all of the subscales, and the effect sizes for these findings were medium to large.

The results of the ANOVAs between program variables and preservice teacher efficacy indicate that the way teacher preparation programs organize their student teaching experiences and the number of literacy methods courses they offer are related to preservice teachers' feelings of teacher efficacy. With the effect sizes for type of student teaching placement and number of student teaching placements being small, the practical significance for these findings is less compelling. However, it should be noted that the effect sizes reported for the number of literacy methods courses were moderate to large indicating there is more convincing evidence for teacher preparation programs to consider the number of literacy methods courses they provide to preservice teachers.

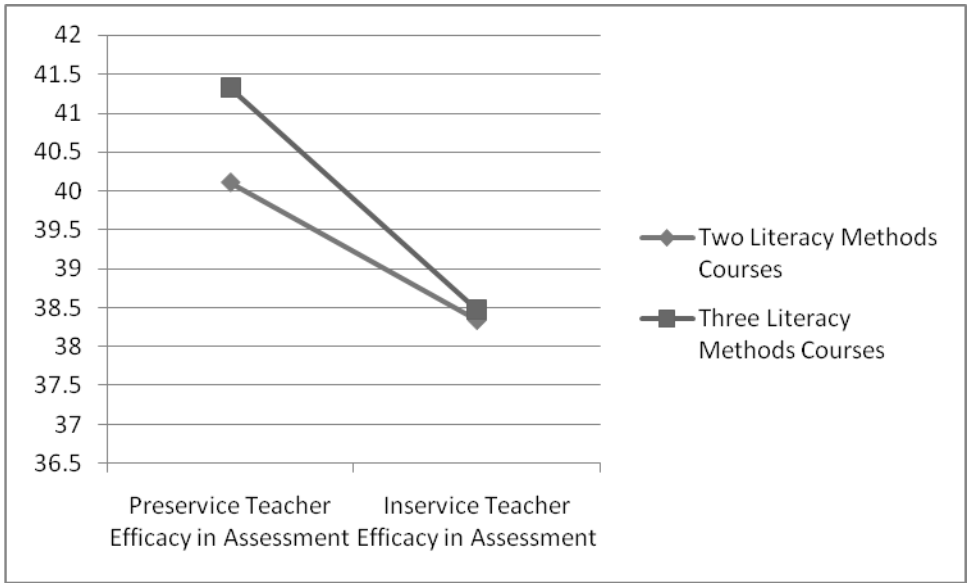

Figure 9. Line graph of number of literacy methods courses and preservice and inservice means.

Research question three addressed the teacher efficacy of inservice teachers. The inservice teachers generally had lower teacher efficacy than their preservice counterparts did on general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment. In summary, the inservice teachers in this study overall felt *mostly* "well prepared" and had relatively high teacher self-efficacy in the areas of general knowledge and skills, reading, mathematics, and assessment. In the area of diversity and multicultural perspectives, inservice teachers reported lower feelings of efficacy with the mean item score falling as "adequately prepared."

In comparison to their preservice counterparts, inservice teachers had lower means in all five areas of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment. Inservice teachers generally felt slightly less than "well prepared," and preservice teachers ranked themselves generally as

"well prepared."

Research question four analyzed how inservice teacher perceptions of professional development and mentoring support were associated with inservice teacher efficacy. The most surprising finding was the number of inservice teachers reporting that professional development activities did not occur. For those inservice teachers that did receive professional development, they rated these opportunities as more than "somewhat useful." Mentoring support was reported with greater frequency for inservice teachers than professional development. When mentoring support was provided, inservice teachers rated this support as *mostly* "very helpful."

For these continuous variables, correlations were run to determine the relationship between perceived usefulness/helpfulness of professional development, mentoring support, and inservice teacher efficacy. It was determined that there was a postitive yet weak correlation between percerived usefulness of professional development experiences and inservice teacher efficacy. There was also a positive yet weak correlation between pereceived helpfulness of mentoring support and inservice teacher efficacy. Both of these analyses reported correlations that were statistically significant.

For the final research question, participants were matched (preservice scores matched with inservice scores) and a repeated measures analysis of variance was incorporated to determine how preservice teacher efficacy changed after one year of teaching. The inservice efficacy scores were aggregated by program variables to determine what effects program variables had on teacher efficacy a year later.

The first analysis was completed using the global factor of teacher efficacy. The

results of the repeated measures ANOVA on the global factor for the type of student teaching (student teacher or intern) variable, and the number of student teaching placements (one placement or two placements) variable were not statistically significant for the group factor, time factor, or for the interaction. For the number of literacy methods courses (two or three courses) there was a statistically significant difference reported for the group factor with a moderate effect size, indicating that teacher efficacy was influenced by coursework. The time factor and the interaction for this analysis were not significant.

The second analysis included the general knowledge and skills teacher efficacy. The results of the repeated measures ANOVA on the general knowledge and skills factor for the type of student teaching (student teacher or intern) variable, the number of student teaching placements (one placement or two placements) variable, and the number of literacy methods courses (two or three) variable were not statistically significant for the group factor, time factor, or for the interaction.

Next, diversity and multicultural perspectives teacher efficacy was analyzed. The results of the repeated measures ANOVA on the diversity and multicultural perspectives factor for the type of student teaching (student teacher or intern) variable, the number of student teaching placements (one placement or two placements) variable, and the number of literacy methods courses (two or three) variable were not statistically significant for the group factor, time factor, or for the interaction.

In the fifth analysis for this question, reading teacher efficacy was analyzed. A repeated measures ANOVA on the reading factor for the type of student teaching (student

teacher or intern) variable resulted in a statistically significant difference for the time factor, but not for the group factor or for the interaction. For the number of student teaching placements (one placement or two placements) variable, there was a statistically significant difference for the time factor, but not for the group factor or for the interaction. For the number of literacy methods courses (two or three courses) variable, there was a statistically significant difference reported for the group factor with a moderate effect size. The time factor and the interaction in this analysis were not statistically significant.

Next, mathematics teacher efficacy was analyzed. The results of the repeated measures ANOVA on the mathematics factor demonstrated that the type of student teaching (student teacher or intern) variable, and the number of student teaching placements (one placement or two placements) variable were not statistically significant for the group factor, time factor, or for the interaction.

For the final analysis in this research question, assessment teacher efficacy was analyzed. The results of the repeated measures ANOVA on the assessment factor for the type of student teaching (student teacher or intern) variable demonstrated that there was a statistically significant difference for the time factor with a moderate effect size, but not for the group factor or for the interaction. For the number of student teaching placements (one placement or two placements) variable, there was a statistically significant difference for the time factor with a moderate effect size, but not for the group factor or for the interaction. For the number of literacy methods courses (two or three courses) variable, there was a statistically significant difference reported for the time factor with a

moderate effect size. The group factor and the interaction for this analysis were not statistically significant.

For all of the analyses using the repeated measures analysis of variance, it was determined that the only finding worth reporting for practical significance was the statistically signficant difference between the teachers that had three literacy methods courses and those that had only two with the effect size as moderate to large. This finding suggests that teacher preparation programs that provide preservice teachers with three literacy methods courses have a greater chance of increasing preservice and inservice teacher efficacy in reading.

The findings and analyses reported in this chapter served as a guide for further discussion, including practical significance and implications for future research. In the next chapter, the researcher discusses this information and the limitations of this study.

CHAPTER V

DISCUSSION

The central purpose of this study was to explore preservice and inservice teacher efficacy. The research questions examined the level of teacher efficacy held by preservice teachers at the conclusion of their teacher preparation program, as well as the teacher efficacy of novice teachers at the end of their first year of teaching. Teacher preparation program variables such as type of student teaching assignment, number of student teaching placements, and number of literacy methods courses and how they influence preservice and inservice teacher efficacy were also examined. Additionally, the perceived usefulness and/or helpfulness of professional development and mentoring support provided to novice teachers was studied to determine its correlation to inservice teacher efficacy. Further analyses explored how the perceptions of preservice teachers change after they begin teaching in the classroom.

This study contributes to the literature in many ways. First, it looked at teacher candidates across multiple teacher preparation programs within one state. This enabled the researcher to examine and compare how the different characteristics of teacher preparation programs influence preservice teacher efficacy, and eventually inservice teacher efficacy. Many previous research studies on teacher efficacy have examined groups of preservice teachers within only a single institution preventing the ability to study participants across multiple teacher preparation programs.

Second, this study contributed to the literature by tracking preservice teachers at the completion of their teacher preparation program through the end of their first year

teaching. Woolfolk Hoy and Burke Spero (2005) emphasized the need for this type of study explaining that "…Longitudinal studies across teacher preparation programs and the first several years in the field could begin to map the development of efficacy beliefs" (p. 346). This study was able to contribute to mapping the development of teacher efficacy beliefs.

Finally, another contribution to the literature was the efficacy instrument presented in this study. Much of the research on teacher self-efficacy has been plagued with concern over the validity of instruments used to measure teacher self-efficacy (Denzine et al., 2005). For this purpose, a confirmatory factor analysis and a bifactor path analysis were utilized to determine the construct validity of the instrument used to measure teacher self-efficacy in specific subject areas, and to determine the number of factors to utilize in this research study. Based upon the results, the Utah Preservice Teacher Efficacy Scale was accepted as a valid and reliable instrument. The confirmatory factor analysis model presented a global factor and five first-order factors as having a good data fit (Dickey, 1996; Roberts, 1999; Stevens, 1996).

The summary of findings, recommendations for practice, limitations, and implications for future research based on the findings of this study are discussed in this section.

Summary of Findings

This section summarizes the findings presented in this research study. Due to the multiple research questions included in this study, this summary will be organized into

five sections: (a) preservice teacher efficacy; (b) teacher preparation program variables and their relationship to preservice teacher efficacy; (c) inservice teacher efficacy; (d) professional development, mentoring support, and their relationship to inservice teacher efficacy; and (e) tracking teacher efficacy at two points in time.

Preservice Teacher Efficacy

This research study builds on a large research base investigating teacher preparation programs and the perceived level of preparedness and self-efficacy of elementary school teacher candidates. Zeichner (2005) indicated the importance of the "intensive examination of databases constructed on representative samples of teacher education programs" (p. 756) for the advancement of the field. The common theme throughout the studies related to this topic is that new teachers need higher quality experiences than what they are receiving in their teacher preparation programs. Bullough (1990), Griffin (1989), and Lanier and Little (1986) emphasized that teacher education programs are not providing adequate time or experiences for budding teachers and highlighted the fact that often times the realities of teaching are oversimplified. McCullough and Minz (1992) reported that teachers lack a feeling of confidence in their preparation to become teachers. Additional studies documented the idealistic expectations of preservice teachers compared to the sudden realities of teaching in a classroom today (e.g., Corcoran, 1995; McCann & Johannessen, 2004; Veenman, 1984). Overall, these studies paint a stark picture of the feelings of teacher preparedness and teacher efficacy in beginning teachers.

As a result of the mounting concerns over how teacher candidates were being

prepared, many teacher preparation programs sought to improve the quality of their programs. In more recent years, studies examining the preparation of teacher education graduates report that preservice teachers' feelings of preparation and teacher efficacy are generally satisfactory (Darling-Hammond, 2006; Helfrich, 2007; Shaw et al., 2007; Zientek, 2007). The current study supports the findings of these more recent studies.

To determine the teacher efficacy of preservice teachers in this study, descriptive statistics were performed on individual items and factors of the Utah Preservice Efficacy Scale. The five first-order factors linked to teacher self-efficacy were general knowledge and skills (items relating to general teaching tasks related to curriculum development and modification to meet the needs of children and relate classroom learning to the real world), diversity and multicultural perspectives (items relating to meeting the needs of English Language Learners and meeting the needs of students from a variety of backgrounds and cultural experiences), reading (items relating to a variety of techniques to use when teaching reading and how best to meet the needs of students at all levels of ability), mathematics (items relating to the techniques that prove useful in teaching mathematical connections and concepts to students at all ability levels), and assessment (items related to assessing students on how to use these assessments to inform instruction).

Preservice teachers in this study (N = 543) reported, on average, feeling "well prepared" to teach in the areas of general knowledge and skills, reading, mathematics, and assessment at the end of their preparation program. This was on a scale from 1 to 5 ranging from "not at all prepared" to "very well prepared" In the area of diversity and

multicultural perspectives, preservice teachers rated themselves, on average, as "adequately prepared" to teach. This finding suggests that though preservice teachers report high feelings of teacher efficacy in most areas, further exploration of how diversity and multicultural perspectives are being addressed and taught in teacher preparation programs is warranted.

The overall item mean, combining the means of all the subscales, was reported as 4.06 by the preservice teachers in this study. In reporting their feelings of preparedness and teacher efficacy across all subscales, preservice teachers reported the highest means for items related to using the state's core curriculum and performance standards to plan instruction, to teach basic knowledge and skills, and to engage students in cooperative work. The areas in which preservice teachers felt least confident were referring students for special assistance, teaching in ways that support students learning English as a second language, and using knowledge about linguistic differences to create learning opportunities for students. These findings suggest that there is a pressing need for preservice teachers to receive more instruction on meeting the linguistic needs of students with diverse backgrounds.

Teacher Preparation Program Variables and Preservice Teacher Efficacy

The second research question sought to determine how teacher preparation program characteristics influence the feelings of teacher efficacy in preservice teachers. Duffy and Atkinson (2001), Kagan (1992), Linek et al. (1999), and Ross and Bruce (2007) have demonstrated that program experiences within teacher preparation programs

can have profound influence on preservice teachers' self-efficacy. These studies suggested that the way that teacher preparation programs are structured can lead to increased feelings of self-efficacy in preservice teachers. Guyton and McIntyre (1990) demonstrated that program experiences – especially student teaching experiences – leave preservice teachers feeling highly efficacious in their perceived abilities to teach in a classroom of their own. Carter (2006) also found that preservice teacher efficacy rose from the beginning to the end of student teaching, indicating that the student teaching experience increased the teacher efficacy of student teachers.

For this study, three program experiences or variables were used to aggregate the efficacy scores of preservice teachers to determine their influence on teacher efficacy. These included the type of student teaching experience (intern or student teacher), the number of student teaching placements (one or two), and the number of literacy methods courses (two or three). The first analysis of variance included the global factor of teacher efficacy. For this factor, student teachers had statistically higher means than the interns did, but there was a low effect size. Student teachers with one placement reported statistically significant higher means as well, but again, there was a low effect size. Due to the low effect size, the practical significance to change how programs structure student teaching opportunities based on the type of student teaching or the number student teaching placements is less compelling. Statistically significant higher means were also reported for those preservice teachers with three literacy methods courses compared to those with only two literacy methods courses. The partial eta^2 effect size for this analysis was medium to large at 0.121. The medium-to-large effect size for this finding suggests a

compelling reason for teacher preparation programs to provide a minimum of three literacy courses to their students in an effort to increase and/or maintain high teacher efficacy in preservice teachers.

The analyses using the first-order factors of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment reported similar findings to that of the global factor. Student teachers reported statistically significant higher means than the interns for diversity and multicultural perspectives and mathematics, but the effect size was low. General knowledge and skills, reading, and assessment did not have statistically significant differences between these groups.

Student teachers with one placement had statistically significant higher means than the student teachers with one placment for general knowledge and skills, mathematics, and assessment. The effect size for these three findings was low, indicating low practical significance. Preservice teachers that had three literacy methods courses had statistically significant higher means than those with only two for general knowledge and skills, diversity and multicultural perspectives, reading, and assessment. All of these reported a medium to large effect size ranging from 0.059 to 0.127, suggesting that again, offering at least three literacy methods courses seems to promote higher teacher efficacy in preservice teachers. The finding that these differences did not persist, with the exception of literacy methods courses, suggests that that the only practically significant recommendation is that teacher preparation programs should consider offering more than two literacy methods courses to provide preservice teachers more time to learn and understand the complexities involved with teaching children to read and write.

Inservice Teacher Efficacy

Once it was determined that preservice teachers reported relatively high levels of self-efficacy, it was necessary to determine the self-efficacy of inservice teachers after they had taught in the classroom for one year. The research literature on novice teacher efficacy has established that traditionally, novice teacher efficacy decreases from the level that preservice teachers report (Tschannen-Moran & Woolkfolk Hoy, 2001). Many studies present evidence that once novice teachers begin teaching in a classroom of their own, they feel unprepared for the challenges of teaching. Kardos et al. (2001) found that novice teachers were surprised by what teaching was really like. Morey and Murphy (1990) have explained that novice teachers encounter many situations in the classroom that cause them to question their own abilities, knowledge, and problem-solving skills to handle these problems and challenges effectively.

In the traditional model, "The university provides the theory, skills, and knowledge about teaching through coursework; the school provides the field setting where such knowledge is applied and practiced; and the beginning teacher provides the individual effort that integrates it all" (Wideen, Mayer-Smith, & Moon, 1998, p. 133). The "two separate worlds of the university and the school exist side by side" (Beck & Kosnick, 2001, p. 7) but rarely, if ever, come in close contact. The bridge between the teacher education program and the public school system, therefore, is the novice teacher and ultimately the teacher's self-efficacy and sense of confidence in their ability to handle the challenges of teaching. Merrow (1999) concluded, "Simply put, we train teachers poorly and then treat them badly – and so they leave in droves…" (p. 10).

Examples of this lack of confidence are documented in the voices of novice teachers in various research studies. Johnson (1986) explained that "…promising young teachers are leaving the teaching profession after a year or two because they've been exposed to the most negative aspects of schools without having had a chance to work with the positive" (p. 36). Consider the thoughts of a novice teacher as captured in the study by McCann and Johannessen (2004):

> I'd stay up late trying to get something that I thought was really good and have sleepless nights, but in the morning…I'd have almost a dry-heaving anxiety…. Just having those kinds of mornings was totally strange for me…. I kind of had to reinvent myself to do this…. (p. 139)

Another teacher in this same study shared these discouraging feelings:

> I have become a darker person. I'm idealistic at heart, but things I've seen daily have made me laugh less and lose some of my youth. I have become more callous and I see it more when I interact with people who are not teachers. It seems their hearts are not as heavy. (p. 144)

To determine if the teacher efficacy of inservice teachers in this study matched those depicted in the literature, descriptive statistics were performed on the same individual items and subscales as were administered to the preservice teachers. The same five first-order factors linked to teacher self-efficacy were general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment.

The descriptive data from the inservice teachers (N = 136) in this study suggests that they had lower teacher efficacy than the preservice teachers. Inservice teachers in this study reported, on average, feeling *mostly* "well prepared" to teach in the areas of general knowledge and skills, reading, mathematics, and assessment at the end of their preparation program. In the area of diversity and multicultural perspectives, inservice

teachers rated themselves, on average, as “adequately prepared” to teach. This finding for diversity and multicultural perspectives was similar to the preservice teachers, again reinforcing the need for teacher preparation programs and elementary schools to explore how topics related to diversity and multicultural perspectives, and meeting the needs of diverse learners, are being addressed. As the demographics of the United States continues to change, teacher preparation programs need to stay on the cutting edge of how to train teachers to meet the needs of more diverse learners.

The overall item mean combining the means of all the subscales was 3.85 as reported by the inservice teachers in this study. In reporting their feelings of preparedness and teacher efficacy, inservice teachers rated the highest means for items related to teaching basic knowledge and skills, to using the state’s core curriculum and performance standards to plan instruction, and to engage students in cooperative work. These were the same means reported as the highest for preservice teachers as well. This finding suggests that once high efficacy is established, it is resistant to change.

The areas in which inservice teachers felt least confident included using community resources to create a multicultural curriculum, using knowledge about linguistic differences to create learning opportunities for students, and developing a curriculum that includes the perspectives, experiences, and contributions of different cultural groups. Aside from the item related to using knowledge about linguistic differences to create learning opportunities for students, the other items were new concerns for these teachers. This finding suggests that once preservice teachers begin teaching in a classroom of their own, they may be exposed to issues and concerns that

they were not able to understand or articulate at the preservice level leading to lower inservice teacher efficacy.

Professional Development, Mentoring Support, and Inservice Teacher Efficacy

Research suggests that preservice programs are not the only entity contributing to teacher efficacy. Once teachers begin teaching in a classroom of their own, the school context, culture, and environment in which they teach continues to influence their efficacy. Two common experiences that most schools provide novice teachers are professional development opportunities and mentoring support. For this reason, these two areas of novice teacher support were included in this research study.

Fritz, Miller-Heyl, Kreutzer, and MacPhee (1995) and Ross and Bruce (2007) both found that teachers participating in inservice and professional development experiences reported higher feelings of efficacy than did teachers that did not participate in these inservice experiences. The fourth research question in this study sought to determine how novice teachers' perceptions of the professional development and mentoring support influenced inservice teacher efficacy.

The first area of interest was professional development. Inservice teachers were asked to report on the types of professional development they received and they were asked to rate the usefulness of these professional development experiences on a scale ranging from 0 (did not occur) to 5 (extremely useful). The second area of interest for this research question was regarding the mentoring support that inservice teachers received. Inservice teachers were asked to rate the helpfulness of the mentoring support on a scale

ranging from 0 (did not occur) to 5 (extremely helpful). These scales were then used to determine if there was a correlation between perceived usefulness of professional development, and perceived helpfulness of mentoring support, with inservice teacher efficacy.

Because professional development and mentoring support were continuous variables, correlations were calculated to determine that there was indeed a positive relationship between both perceived usefulness of professional develoment, and perceived helpfulness of mentoring support with inservice teacher efficacy. The greater the inservice teachers' perceptions were regarding the helpfulness of the professional development experiences and the usefulness of the mentoring support, the higher the feelings of inservice teacher efficacy. Both of these analyses reported statistically significant findings.

It is interesting to note that there were large numbers of inservice teachers reporting that many professional development opportunities did not occur. In some cases, these numbers were as high as 76%. For example, 75.6% of inservice teachers reported there was no professional development addressing the needs of students with disabilities, and 67.2% reported that no professional development addressing the needs of English Language Learners was provided. These findings are concerning as it is these very students that are falling through the cracks creating the achievement gap. The most frequent professional development opportunites reported by inservice teachers were related to the topic of teaching reading. It is also interesting to note that if inservice teachers reported receiving professional development, they were more likely to rate it in

the categories of "somewhat useful" to "extremely useful" than "not useful." This suggests that most often, teachers provided with professional development opportunities, are likely to perceive them as at least somewhat useful.

The different types of mentoring support that novice teachers receive were reported by novice teachers much more frequently than professional development opportunties. For the most part, novice teachers rated the mentoring support they received as "very helpful." The types of mentoring support that novice teachers found most helpful included mentors being good listeners, mentors encouraging novice teachers during periods of self doubt, and mentors working to improve novice teacher self-efficacy. Again, these findings suggest the important, even critical, role that schools and more experienced teachers can provide in promoting and building teacher effiacy in budding teachers.

Much has been written in the literature about the benefits of professional development (Corcoran, 1995; Darling-Hammond, 2003) and mentoring support (Holloway, 2003; McCord & Bowden, 2003; Wilson, Floden, & Ferrini-Mundy, 2001). These studies, along with the current study, suggested that the usefulness of professional development opportunities and helpfulness of the mentoring support could be a great boon to the efficacy of novice teachers. Schools can play a significant role in building inservice teacher efficacy by providing highly effective and meaningful opportunties for teacher growth development, keeping in mind that these opportunities must be perceived as useful and helpful to novice teachers.

Tracking Teacher Self-Efficacy

The final research question in this study tracked participants from the preservice teacher stage to the inservice teacher stage. The purpose of this analysis was to determine if and how teacher efficacy changes over time, based on the same teacher preparation program variables already identified earlier. Previous studies on this topic have looked at groups of preservice teachers and groups of novice teachers, but few studies have looked at the same preservice and novice teachers (Helfrich, 2007; Woolfolk Hoy & Burke Spero, 2005). A repeated measures analysis of variance was used to determine the influence that program variables had on inservice teacher efficacy. Tracking participants (N = 123) from their preservice program to the end of their first year of teaching made this analysis possible.

Using the global factor in the first analysis, it was determined that type of student teaching (student teacher or intern), and number of student teaching placements (one or two), presented no statistically significant differences for the group factor, time factor, or for the interaction. The number of literacy methods courses (two or three), however, reported a statistically significant finding for the grouping factor. Teachers that had three literacy courses reported higher means for the group factor with a moderate effect size of 0.097. The time factor and the interaction were not significant. The findings for the statistically significant differences for the grouping factor explains the positive affect that having three literacy courses can have on teacher efficacy.

It is surprising to note the amount of literacy coursework that teachers are provided appears so strongly in the global factor analysis. Perhaps one of the reasons it

appears prominently in the combined teacher efficacy scale is that literacy is such a huge part of elementary teaching. Learning to read is a crucial part of, and emphasis in, elementary instruction. Literacy instruction permeates all subject areas including social studies, science, and even math. Recent legislation has also placed more emphasis on literacy instruction at the elementary level.

For the more focused repeated analysis of variance for the five first-order factors of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment, the findings were slightly different. For general knowledge and skills, diversity, and for mathematics, no statistically significant findings were reported based on the type of student teaching, number of student teaching placements, or number of literacy courses, for the group factors, time factors, or for the interactions.

For reading, the results of the repeated measures analysis of variance on the type of student teaching (student teacher or inter) variable, and the number of student teaching placements (one or two) variable reported that there was *not* a statistically significant difference for the grouping factors, or for the interaction, but there was one for the time factors. This finding collaborates with earlier descriptive evidence that teacher efficacy decreases from the preservice stage to the inservice stage. For the number of literacy methods courses, a statistically significant difference was reported for the group factor with a moderate to large effect size. The reported means of the preservice teachers with three literacy methods courses was substantially higher than those with only two literacy methods courses. This makes sense. The more instruction preservice teachers receive on effective literacy teaching methods, the more confident they should feel about their

abilities to teach children to read and write. Again, these findings suggest the need for teacher preparation programs to consider the amount of coursework that preservice teachers receive to increase reading teacher efficacy.

For assessment, the results of the repeated measures analysis of variance for the type of student teaching (student teacher or intern) variable, the number of student teaching placements (one or two) variable, and the number of literacy methods courses (two or three) reported that there was *not* a statistically significant difference for the grouping factors, or for the interaction, but there was one for the time factors for all three. This simply suggests that the preservice group reported statistically significant higher means than those in the inservice group for these program variables. This finding reinforces the finding presented earlier that teacher efficacy decreases once preservice teachers begin teaching.

The reoccuring theme through all of the statistically significant findings in these analyses has been the influence that three literacy methods courses has on teacher efficacy. Having three literacy methods courses instead of two suggests that higher teacher efficacy results. These findings also suggest that the type of student teaching assignment (student teacher or intern), or the number of student teaching placements (one or two) does not appear to have statistically significant advantages one way or another over time. All of these findings are beneficial for teacher preparation programs to consider as they structure and organize their programs in attempt to prepare highly qualified teachers.

Recommendations for Practice

Through the years, varying programs and policies have been implemented in an attempt to train confident and capable teachers. Teachers without these qualities do not seem to have the staying power needed to make it past the initial years of teaching. Grant (2006) suggested that teachers who do not feel successful or have low self-efficacy in their role as a teacher do not stay in the profession. Coladarci (1992) reported that teacher efficacy was the strongest prectictor of commitment to the profession. Darling-Hammond (2003), Guskey (1988), and Tschannen-Moran and Woolfolk Hoy (2001) took these findings a step further by stating that teacher efficacy was the strongest predictor of not only professional retention, but performance and commitment as a teacher. Additionally, Chapman and Green (1986) tied negative preservice program experiences to teacher attrition.

In order to prevent the high rate of novice teacher attrition and to train teachers that have high teacher efficacy, this research study has provided some salient points worthy of consideration. First, preservice teachers in this study report feeling generally satisfied with their preparation to teach. This finding suggests that the overall, teacher preparation programs in this study are preparing teachers adequately. This finding also indicates that teacher preparation program characteristics such as the type of student teaching experience (student teacher or intern), or the number of student teaching placements (one or two) do not provide statistically significant advantages one way or another on teacher efficacy over time. The number of literacy methods courses, however, does seem to provide statistically significant advantages in securing and maintaining high

teacher efficacy. This information is helpful for teacher education institutions as they structure their teacher preparation programs and make choices about the experiences they provide preservice teachers.

Additionally, knowing that teacher education graduates generally feel satisfied with their preparation provides a great opportunity for teacher preparation programs to drill down and focus more specifically on areas that were reported in this study as lacking. The profession can turn from looking at overall teacher preparation to focusing on specific areas needing attention such as training preservice teachers to meet the needs of students with disabilities, English Language Learners, and other diverse learners. Research continues to demonstrate that at the most critical time in their development, many struggling students are assigned the most inexperienced or novice teachers. Hitz and Roper (1986) remind us that the children that suffer from the gaps in teacher education programs are the children that end up in the classrooms of these inexperienced teachers. This reality is especially true for poor and minority students. Peske and Haycock (2006) explained that "The very children who most need strong teachers are assigned, on average, to teachers with less experience, less education, and less skill than those who teach other children" (p. 2). Preservice and inservice teachers in this study clearly indicated the need for more training and assistance in meeting the needs of all students – especially those with special needs. This study recommends that teacher preparation programs focus more attention on these specific issues in order to have a lasting impact on not only teacher efficacy but perhaps student achievement as well. Darling-Hammond (2006) explained,

> Teachers who felt most prepared were most likely to adjust teaching based on student progress and learning styles, to use research in making decisions, and to have students set some of their own learning goals and assess their own work.... Equally interesting is the fact that graduates who feel better prepared are significantly more likely to feel highly efficacious – to believe they are making a difference and can have more effect on student learning than peers, home environment, or other factors. (p. 125)

The second point ascertained from this research study was that using a global factor to study teacher efficacy was helpful, but using the five first-order factors provided even more meaningful feedback and information about specific areas of teacher efficacy. Looking at teacher efficacy in specific areas and with a more focused lens provided deeper insight in to which types of teacher efficacy were being affected the most. For example, the analyses in this study suggested that program variables do not have a statistically significant affect on general knowledge and skills teacher efficacy, diversity and multicultural perspectives teacher efficacy, or mathematics teacher efficacy. Preservice teacher efficacy in reading and assessment did prove to be more affected by certain program variables.

What this finding suggests is that the way preparation programs are structured may affect or reinforce one form of teacher efficacy but have no impact on a different form of teacher efficacy. Specifically, having two literacy methods courses did not have an effect on diversity and multicultural perspectives teacher efficacy. It did, however, affect reading teacher efficacy. Knowing the subtle impacts of how program variables influence subject area teacher efficacy can assist teacher preparation programs in working to build teacher efficacy in all areas.

Third, and perhaps the most significant finding in this study, was the influence

that professional development and mentoring support, if perceived as useful and helpful, had on inservice teacher efficacy. This finding is important because it appears the novice teacher stage is the most vulnerable to and reports the greatest decline in teacher efficacy. This study corroborates previous research studies that demonstrate the schools where teachers work can promote high inservice teacher efficacy. Fritz et al. (1995) reported that teachers attending an inservice training compared to teachers that did not had higher self-efficacy, even though efficacy scores for both the control and experimental teacher group were the same before the inservice training. Additionally, Ross and Bruce (2007) found the same results when studying a group of inservice teachers that attended an inservice training on classroom management compared to a group of inservice teachers that did not. The inservice training experience produced higher efficacy in teachers. The recommendation for more effective, useful, and helpful professional development and mentoring support is clearly supported in this study.

In conclusion, this study has provided meaningful information to assist teacher preparation programs and elementary schools in building and maintaining teacher efficacy in preservice teachers and inservice teachers. There is still work to be done in the area of exploring how teacher efficacy is built and how to maintain high teacher efficacy. This study has also provided researchers with a valid and reliable instrument to use in future studies that explore teacher efficacy in specific areas of general knowledge and skills, diversity and multicultural perspectives, reading, mathematics, and assessment.

Limitations

All research studies have their limitations and this one is no exception. This study had at least four limitations. The first limitation had to do with the very nature of self-report data. In order to limit the time it takes to complete a survey, items from this survey were administered using a Likert-scale format. This close-ended format prevents the researcher from being able to thoroughly investigate the perceptions and feelings of teacher self-efficacy that the participants had on the individual subscales and overall measurement. Additionally there were no follow up interviews conducted to gather further insight into feelings of preservice and inservice teachers.

The second limitation was the voluntary nature of this study. Preservice teachers in this study completed the Utah Preservice Efficacy Scale as part of their teacher education program. Inservice teachers, however, received the survey in the mail and had to take the time to complete the survey on their own and return it. This raises the question about the nature of the inservice sample. Is the teacher that takes the time to complete the survey and return it different than the teacher that receives the survey and throws it away? Are the inservice teachers that complete the survey more or less satisfied than the teachers that don't complete the survey, and do they see the survey as an opportunity to express their opinions?

The sample size of the inservice teachers is another limitation. The preservice sample consisted of 543 participants and was essentially the population of all preservice teachers in the state of Utah. The inservice teacher sample consisted of 136 participants extracted from the preservice population. This results to a sample representing 25% of the

population. There are two reasons for this smaller sample of inservice teachers. First, not all teacher education graduates of Utah teacher preparation programs go on to teach in the state of Utah. Some go on to teach in other states, some go back to school for further training and education, and others never enter the teaching field at all. The second reason for the small sample of inservice teachers is the challenge in tracking and locating these teachers. Novice teachers for this study were identified in the database at the State Office of Education. From there, teachers were traced to various elementary schools throughout the state. These teachers received letters at the schools in which they were teaching. This process opened up possibilities for human error and failure to locate and contact novice teachers that graduated from Utah teacher preparation programs. Furthermore, information regarding novice teachers in the database may not be entered in the database at all or it may be inaccurate, meaning surveys never reached the intended novice teacher.

Tracking teachers once they leave teacher preparation programs can be difficult. For this reason, research that tracks teachers as they enter the classroom is limited. One remedy for this would be to incorporate more than academic year into a study in order to increase the preservice and inservice teacher samples. This would create a larger pool of individuals from which to identify matched participants from both samples.

The fourth limitation had to do with the lack of demographic data on the participants in this study. The preexisting data utilized in this study did not contain any demographic information related to race, ethnicity, age, or gender. This limits the generalizability of this study to larger populations without knowing more detailed information about the types of individuals being studied. However, it is known that the

population of teachers in Utah is less diverse than many states, and as is true nationwide, elementary teachers, with few exceptions, are female. This means that these findings are most relevant to a white, female population of teachers.

Implications for Future Research

Additional studies on preservice and novice teacher efficacy could include the following:

1. A comparative study on the teacher self-efficacy of preservice and novice teachers that come from a more diverse population or a more diverse program than those participating in this study. This would be interesting to determine if results in these studies remain consistent with the current study.

2. A comparative study of the relationship between teacher preparation program characteristics other than those that were included in the current study. Additional program variables could include practicum or field work experiences, university teaching personnel (tenured or adjunct professors), student teaching university supervisors, and cooperating teachers. This study only looked at a limited number of program variables to determine their influence on teacher efficacy. Understanding the construct of teacher self-efficacy and how best to build it in preservice teachers continues to be an interest in the teacher education research literature. For example, Carter (2006) and Fives et al. (2007) demonstrated that real world or mastery experiences like student teaching increased feelings of teacher efficacy. Even providing preservice teachers with field trips to work with children at centers and programs increased teacher efficacy (Parameswaran, 1998).

More studies and analyses on the experiences that teacher preparation programs provide their teacher candidates is needed so that programs can promote teacher efficacy. A study like this would help paint a clearer picture of how multiple program variables may contribute to preservice teacher preparedness and self-efficacy.

3. A longitudinal study that tracks novice teachers into their second and third year, and possibly even further, to map the development of teacher efficacy (Woolfolk Hoy & Burke Spero, 2005). How do experienced teachers rate their self-efficacy compared to novice teachers? Does self-efficacy tend to increase as teachers gain experience?

4. A comparative study on preservice and novice teacher efficacy and its connection to student achievement would add to this field of research. How does student achievement correlate with teacher efficacy?

5. A comparative study on preservice and novice teacher efficacy and its connection to teacher knowledge would also benefit this field of research. For example, how does reading teacher efficacy correlate with teacher knowledge in reading? Do teachers exhibiting strong reading teacher knowledge also report high feelings of teacher self-efficacy in reading?

6. A study that looks at the relationship between teacher efficacy and preparedness to teach specific subject areas. For example, teachers that feel highly efficacious to teach reading may not feel as efficacious in their abilities to teach math. Teasing out the differences between subject areas and how they impact teacher efficacy would be beneficial. Future studies that explore how best to instruct preservice teachers

to teach individual academic subjects, and build high teacher efficacy in each area, is needed.

Finally, as the study of teacher self-efficacy continues to progress, opportunities to further explore the construct of preservice and inservice teacher efficacy is clearly warranted. In order to more fully understand the complexities of how program variables and school context variables influence teacher efficacy, a study involving structural equation modeling (see Figure 10) would be helpful.

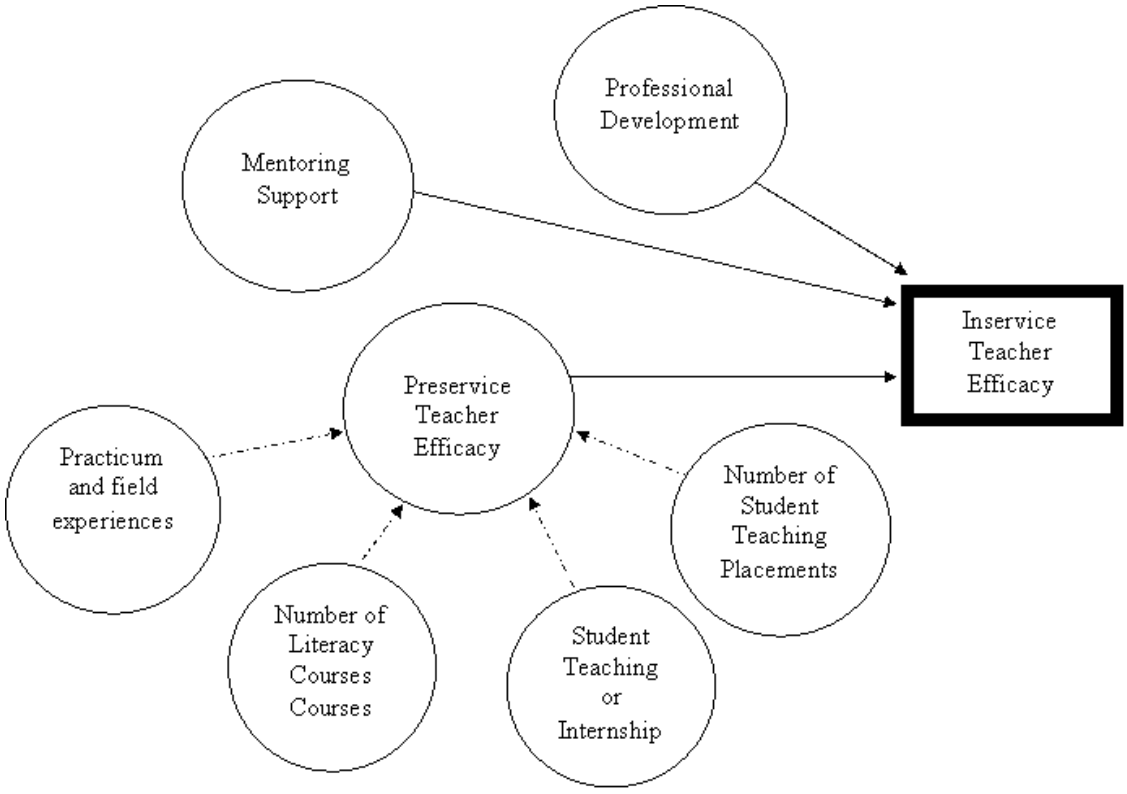

Figure 10. Structural equation path model for determining teacher efficacy.

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APPENDICES

Appendix A

Utah Preservice Teacher Efficacy Scale

Utah Teacher Efficacy Scale (Preservice)

Your college, in collaboration with several other teacher preparation programs in Utah, is inviting you to participate in a major, six-year study of teacher preparation and student achievement. The project The project has the support of the Utah State Office of Education, the Commissioner of the Utah System of Higher Education, and the strong support of the dean of your teacher preparation college. This is an exceptional opportunity to help your college and Utah's other major teacher preparation programs improve the quality of teacher education.

YOUR PRIVACY IS IMPORTANT TO YOU AND IMPORTANT TO US! Each year for the next 3 years, as long as you are teaching in Utah schools, we will follow up to ask you about your perspectives on your teaching experiences. In order to conduct the follow-up surveys in the coming years, we are asking that you provide the last 4 digits of your Social Security Number. This information will be securely maintained BY YOUR COLLEGE in accordance with federal privacy laws and will be used ONLY for this project.

PLEASE BE CANDID. All of your responses to the entire survey are CONFIDENTIAL. NO MEMBER OF YOUR FACULTY WILL HAVE ACCESS TO YOUR RESPONSES.

Marking Instructions:

- Use a #2 pencil
- Make dark marks that fill the circle completely
- Make no stray marks
- Select only one answer for each question

Thank you for participating!!

A Professional Knowledge and Skills Efficacy

Directions: Think about your professional preparation for teaching. In considering this professional preparation, take into account your course work, field experiences, seminars, student teaching, and any other formal part of your preparation.

GENERAL KNOWLEDGE AND SKILLS

Based on the experiences in your teacher preparation program, how prepared do you feel to do the following?

		NOT AT ALL	POORLY	ADEQUATELY	WELL	VERY WELL
1.	Improve the academic performance of challenging or unmotivated students.	☐	☐	☐	☐	☐

		NOT AT ALL	POORLY	ADEQUATELY	WELL	VERY WELL
2.	Tailor teaching and curriculum to individual students' needs.	☐	☐	☐	☐	☐
3.	Develop curriculum that builds on students' experiences, interests, and abilities.	☐	☐	☐	☐	☐
4.	Relate classroom learning to the real world.	☐	☐	☐	☐	☐
5.	Use educational technology in instruction (e.g., word processing, spreadsheet, games).	☐	☐	☐	☐	☐
6.	Choose different teaching strategies to meet the needs of different ability levels of students.	☐	☐	☐	☐	☐
7.	Maintain an orderly, purposeful learning environment.	☐	☐	☐	☐	☐
8.	Engage students in cooperative group work.	☐	☐	☐	☐	☐
9.	Integrate subject matter knowledge, knowledge of learning and student development, and curriculum to plan effective lessons.	☐	☐	☐	☐	☐
10.	Create learning experiences that make the central concepts of the subject matter meaningful to students.	☐	☐	☐	☐	☐
11.	Use the state's core curriculum and performance standards to plan instruction.	☐	☐	☐	☐	☐
12.	Motivate students to participate in academic tasks.	☐	☐	☐	☐	☐
13.	Teach basic knowledge and skills.	☐	☐	☐	☐	☐
14.	Refer students for special assistance when appropriate (e.g., speaking, reading).	☐	☐	☐	☐	☐
15.	Prepare students to be engaged citizens in a democracy.	☐	☐	☐	☐	☐

DIVERSITY AND MULTICULTURAL PERSPECTIVES

Based on the experiences in your teacher preparation program, how prepared do you feel to do the following?

16.	Help parents and families to better support their child's learning.	☐	☐	☐	☐	☐
17.	Implement strategies to help students from different cultures interact positively with each other.	☐	☐	☐	☐	☐
18.	Use community resources (e.g., library, museum, art center) to create a multicultural curriculum.	☐	☐	☐	☐	☐
19.	Work with parents and families to help me understand students and support their learning.	☐	☐	☐	☐	☐
20.	Develop a curriculum that includes the perspectives, experiences, and contributions of different cultural groups.	☐	☐	☐	☐	☐
21.	Teach in ways that support students learning English as a second language.	☐	☐	☐	☐	☐
22.	Address the needs of students from diverse cultural backgrounds.	☐	☐	☐	☐	☐
23.	Encourage students to see, question, and interpret ideas from diverse perspectives.	☐	☐	☐	☐	☐
24.	Use knowledge about linguistic differences to create learning opportunities for students.	☐	☐	☐	☐	☐

		NOT AT ALL	POORLY	ADEQUATELY	WELL	VERY WELL
	READING					
	Based on the experiences in your teacher preparation program, how prepared do you feel to do the following?					
25.	teach reading vocabulary (emphasizing word meaning).	☐	☐	☐	☐	☐
26.	teach oral reading.	☐	☐	☐	☐	☐
27.	help foster students' oral or written responses to literature.	☐	☐	☐	☐	☐
28.	teach silent reading (including time for independent reading).	☐	☐	☐	☐	☐
29.	use comprehension activities (e.g., discussion questions and assignments).	☐	☐	☐	☐	☐
30.	use instructional strategies to help children with their reading comprehension.	☐	☐	☐	☐	☐
31.	use a variety of reading assessments (e.g., observation, portfolios, tests, performance tasks, and anecdotal records) to determine students' strengths, needs, and progress.	☐	☐	☐	☐	☐
32.	teach reading to groups that are of mixed ability.	☐	☐	☐	☐	☐
33.	evaluate reading materials for their usefulness and appropriateness for your students.	☐	☐	☐	☐	☐
34.	understand how youngsters come to acquire reading skills.	☐	☐	☐	☐	☐
35.	use the textbook as a resource in reading rather than as the primary instructional tool.	☐	☐	☐	☐	☐
36.	teach reading (oral or silent) during social studies, science, or mathematics classes.	☐	☐	☐	☐	☐
	MATHEMATICS					
	Based on the experiences in your teacher preparation program, how prepared do you feel to do the following?					
38.	use mathematical problem solving processes in teaching.	☐	☐	☐	☐	☐
39.	teach mathematical representations (e.g., graphs, tables).	☐	☐	☐	☐	☐
40.	use mathematics communication processes in teaching.	☐	☐	☐	☐	☐
41.	integrate mathematics with other subject areas.	☐	☐	☐	☐	☐
42.	teach mathematical concepts to student groups that are mixed in ability.	☐	☐	☐	☐	☐
43.	teach connections (number sense, operations, and patterns) among mathematical ideas.	☐	☐	☐	☐	☐
44.	use discovery approaches in mathematics.	☐	☐	☐	☐	☐
45.	use manipulatives (e.g., blocks) in mathematics.	☐	☐	☐	☐	☐
46.	take into account students' prior conceptions about mathematics when planning curriculum and instruction.	☐	☐	☐	☐	☐

47.	use the textbook as a resource in mathematics rather than as the primary instructional tool.	☐	☐	☐	☐	☐

ASSESSMENT

Based on the experiences in your teacher preparation program, how prepared do you feel to do the following?

48.	assess how well students are learning.	☐	☐	☐	☐	☐
49.	use standardized assessments to guide your decisions about what skills, concepts, and processes to teach.	☐	☐	☐	☐	☐
50.	align assessments with expectations of what students should know and be able to do.	☐	☐	☐	☐	☐
51.	assess higher level objectives (problem-solving, critical thinking, application, etc.).	☐	☐	☐	☐	☐
52.	analyze student work in order to assess and modify your own teaching strategies.	☐	☐	☐	☐	☐
53.	use alternative assessment practices (e.g., portfolios, performance tests, student self-assessment strategies).	☐	☐	☐	☐	☐
54.	use student assessments to guide your decisions about what skills, concepts, and processes to teach.	☐	☐	☐	☐	☐
55.	monitor students' progress and adjust instruction accordingly.	☐	☐	☐	☐	☐
56.	use state core test results to inform your instructional planning.	☐	☐	☐	☐	☐
57.	create assessments that prepare students to be successful in taking core tests.	☐	☐	☐	☐	☐

B DEMOGRAPHIC INFORMATION

1. Last 4 Digits of My SSN:				
(note: black out the entire box)	0	0	0	0
	1	1	1	1
	2	2	2	2
	3	3	3	3
	4	4	4	4
	5	5	5	5
	6	6	6	6
	7	7	7	7
	8	8	8	8
	9	9	9	9

2. Month of birth:	
January	☐
February	☐
March	☐
April	☐
May	☐
June	☐
July	☐
August	☐
September	☐
October	☐
November	☐
December	☐

3. My university/college:	
BYU	☐
Dixie	☐
SUU	☐
U of U	☐
USU	☐
UVSC	☐
Weber State	☐
Western Governors Univ.	☐
Westminster	☐
University of Phoenix	☐
Alternative Route to License (ARL)	☐
Other_____	☐

4. Year of program completion:

2007	☐
2008	☐
2009	☐
2010	☐

5. What degree are you completing?

Traditional 4 Year Bachelor's Degree program	☐
Master's Degree program	☐
State Alternative Route to License (ARL) Program.	☐

6a. Did you serve a year-long internship?

Yes	☐
No	☐

6b. Did you take most of your teacher preparation classes at a remote site that is an extension of your university's main campus?

Yes	☐
No	☐

7a. Did you complete more than one student teaching placement?

Yes	☐
No	☐

8a. If yes, how many weeks long was your first student teaching placement?

4	☐
5	☐
6	☐
7	☐
8	☐
9	☐
10 or more	☐

8b. If yes, how many weeks long was your second student teaching placement?

4	☐
5	☐
6	☐
7	☐
8	☐
9	☐
10 or more	☐

9a. Have you already secured employment as a teacher?

Yes	☐
No	☐

9b. If yes, where?

Utah public schools	☐	
Utah private schools	☐	
outside of Utah	☐	Please specify location_____

9c. If no, are you actively seeking employment as a teacher?

Yes	☐
No	☐

9d. If yes (that you are actively seeking employment as a teacher), where are you seeking employment?

Utah public schools	☐	
Utah private schools	☐	
outside of Utah	☐	Please specify location_____

10. How many years do you expect to be employed as a teacher?

1	☐
2	☐
3	☐
4	☐
5	☐
6-10	☐
11-15	☐
more than 15	☐

11. How likely are you to choose teaching as a long-term career (more than 5 years)?

highly unlikely	☐
unlikely	☐
likely	☐
highly likely	☐

12. During your career, how likely are you to pursue employment as an educator in a role other than as a teacher (e.g. school guidance counselor, school psychologist, school administrator?

highly unlikely	☐
unlikely	☐
likely	☐
highly likely	☐

Appendix B

Utah Inservice Teacher Efficacy Scale

Utah Teacher Efficacy Scale (Inservice)

Your college, in collaboration with several other teacher preparation programs in Utah, is continuing to participate in a major, six-year study of teacher preparation and student achievement. The project has the support of the Utah State Office of Education, the Commissioner of the Utah System of Higher Education, and the strong support of the dean of your teacher preparation college and your district superintendent. This is an exceptional opportunity to help your college and Utah's other major teacher preparation programs improve the quality of teacher education. We hope that you will assist us in our study by completing this survey.

YOUR PRIVACY IS IMPORTANT TO YOU AND IMPORTANT TO US! Each year for the next 3 years, as long as you are teaching in Utah schools, we will follow up to ask you about your perspectives on your teaching experiences. In order to conduct the follow-up surveys in the coming years, we are asking that you provide the last 4 digits of your Social Security Number. This information will be securely maintained by the Novice Teacher Project in accordance with federal privacy laws and will be used ONLY for this project.

PLEASE BE CANDID. All of your responses are CONFIDENTIAL. NO MEMBER OF YOUR FACULTY OR SCHOOL DISTRICT WILL HAVE ACCESS TO YOUR RESPONSES.

Thank you for participating!!

Marking Instructions:

- Make dark marks that fill the square completely
- Make no stray marks
- Select only one answer for each question

A PROFESSIONAL KNOWLEDGE AND SKILLS EFFICACY

Directions: Think about your current teaching practices.

GENERAL KNOWLEDGE AND SKILLS

How well can you do the following?

		NOT AT ALL	POORLY	ADEQUATELY	WELL	VERY WELL
1.	Improve the academic performance of challenging or unmotivated students.	☐	☐	☐	☐	☐
2.	Tailor teaching and curriculum to individual students' needs.	☐	☐	☐	☐	☐
3.	Develop curriculum that builds on students' experiences, interests, and abilities.	☐	☐	☐	☐	☐

		NOT AT ALL	POORLY	ADEQUATELY	WELL	VERY WELL
4.	Relate classroom learning to the real world.	☐	☐	☐	☐	☐
5.	Use educational technology in instruction (e.g., word processing, spreadsheet, games).	☐	☐	☐	☐	☐
6.	Choose different teaching strategies to meet the needs of different ability levels of students.	☐	☐	☐	☐	☐
7.	Maintain an orderly, purposeful learning environment.	☐	☐	☐	☐	☐
8.	Engage students in cooperative group work.	☐	☐	☐	☐	☐
9.	Integrate subject matter knowledge, knowledge of learning and student development, and curriculum to plan effective lessons.	☐	☐	☐	☐	☐
10.	Create learning experiences that make the central concepts of the subject matter meaningful to students.	☐	☐	☐	☐	☐
11.	Use the state's core curriculum and performance standards to plan instruction.	☐	☐	☐	☐	☐
12.	Motivate students to participate in academic tasks.	☐	☐	☐	☐	☐
13.	Teach basic knowledge and skills.	☐	☐	☐	☐	☐
14.	Refer students for special assistance when appropriate (e.g., speaking, reading).	☐	☐	☐	☐	☐
15.	Prepare students to be engaged citizens in a democracy.	☐	☐	☐	☐	☐

DIVERSITY AND MULTICULTURAL PERSPECTIVES

How well can you do the following?

16.	Help parents and families to better support their child's learning.	☐	☐	☐	☐	☐
17.	Implement strategies to help students from different cultures interact positively with each other.	☐	☐	☐	☐	☐
18.	Use community resources (e.g., library, museum, art center) to create a multicultural curriculum.	☐	☐	☐	☐	☐
19.	Work with parents and families to help me understand students and support their learning.	☐	☐	☐	☐	☐
20.	Develop a curriculum that includes the perspectives, experiences, and contributions of different cultural groups.	☐	☐	☐	☐	☐
21.	Teach in ways that support students learning English as a second language.	☐	☐	☐	☐	☐
22.	Address the needs of students from diverse cultural backgrounds.	☐	☐	☐	☐	☐
23.	Encourage students to see, question, and interpret ideas from diverse perspectives.	☐	☐	☐	☐	☐
24.	Use knowledge about linguistic differences to create learning opportunities for students.	☐	☐	☐	☐	☐

READING

How well can you do the following?

25.	Teach reading vocabulary (emphasizing word meaning).	☐	☐	☐	☐	☐

		NOT AT ALL	POORLY	ADEQUATELY	WELL	VERY WELL
26.	Teach oral reading.	☐	☐	☐	☐	☐
27.	Help foster students' oral or written responses to literature.	☐	☐	☐	☐	☐
28.	Teach silent reading (including time for independent reading).	☐	☐	☐	☐	☐
29.	Use comprehension activities (e.g., discussion questions and assignments).	☐	☐	☐	☐	☐
30.	Use instructional strategies to help children with their reading.	☐	☐	☐	☐	☐
31.	Use a variety of reading assessments (e.g., observation, portfolios, tests, performance tasks, and anecdotal records) to determine students' strengths, needs, and progress.	☐	☐	☐	☐	☐
32.	Teach reading to groups that are of mixed ability.	☐	☐	☐	☐	☐
33.	Evaluate reading materials for their usefulness and appropriateness for your students.	☐	☐	☐	☐	☐
34.	Understand how children come to acquire reading skills.	☐	☐	☐	☐	☐
35.	Use the textbook as a resource in reading rather than as the primary instructional tool.	☐	☐	☐	☐	☐
36.	Teach reading (oral and silent) during social studies, science, or mathematics classes.	☐	☐	☐	☐	☐
37.	Adapt reading instruction to accommodate students with special needs.	☐	☐	☐	☐	☐

MATHEMATICS

How well can you do the following?

38.	Use mathematical problem solving processes in teaching.	☐	☐	☐	☐	☐
39.	Teach mathematical representations (e.g., graphs, tables).	☐	☐	☐	☐	☐
40.	Use mathematics communication processes in teaching.	☐	☐	☐	☐	☐
41.	Integrate mathematics with other subject areas.	☐	☐	☐	☐	☐
42.	Teach mathematical concepts to student groups that are mixed in ability.	☐	☐	☐	☐	☐
43.	Teach connections (number sense, operations, and patterns) among mathematical ideas.	☐	☐	☐	☐	☐
44.	Use discovery approaches in mathematics.	☐	☐	☐	☐	☐
45.	Use manipulatives (e.g., blocks) in mathematics.	☐	☐	☐	☐	☐
46.	Take into account students' prior conceptions about mathematics when planning curriculum and instruction.	☐	☐	☐	☐	☐
47.	Use the textbook as a resource in mathematics rather than as the primary instructional tool.	☐	☐	☐	☐	☐

ASSESSMENT

How well can you do the following?

		NOT AT ALL	POORLY	ADEQUATELY	WELL	VERY WELL
48.	Assess how well students are learning.	☐	☐	☐	☐	☐
49.	Use standardized assessments to guide your decisions about what skills, concepts, and processes to teach.	☐	☐	☐	☐	☐
50.	Align assessments with expectations of what students should know and be able to do.	☐	☐	☐	☐	☐
51.	Assess higher-level objectives (problem-solving, critical thinking, application, etc.).	☐	☐	☐	☐	☐
52.	Analyze student work in order to assess and modify your own teaching strategies.	☐	☐	☐	☐	☐
53.	Use alternative assessment practices (e.g., portfolios, performance tests, student self-assessment strategies).	☐	☐	☐	☐	☐
54.	Use student assessments to guide your decisions about what skills, concepts, and processes to teach.	☐	☐	☐	☐	☐
55.	Monitor students' progress and adjust instruction accordingly.	☐	☐	☐	☐	☐
56.	Use state core test results to inform your instructional planning.	☐	☐	☐	☐	☐
57.	Create assessments that prepare students to be successful in taking core tests.	☐	☐	☐	☐	☐

B PROFESSIONAL DEVELOPMENT

Part A. For each item below, tell us whether or not you received this type of support. If "yes," please indicate the extent to which this support has been helpful to you. If you did not have professional development experience in one or more of the areas during the past year, please skip to the next item.

	In the past year, I have received professional development support designed to help me:	DID NOT OCCUR	NOT USEFUL	MINIMALLY USEFUL	SOMEWHAT USEFUL	VERY USEFUL	EXTREMELY USEFUL
1.	Manage the classroom more effectively.	☐	☐	☐	☐	☐	☐
2.	Use teaching strategies designed for diverse learners.	☐	☐	☐	☐	☐	☐
3.	Better understand mathematics content.	☐	☐	☐	☐	☐	☐
4.	Use a wider repertoire of strategies to help my students learn mathematics.	☐	☐	☐	☐	☐	☐
5.	Better understand language and literacy processes.	☐	☐	☐	☐	☐	☐
6.	Use a wider repertoire of strategies to help my students develop as readers.	☐	☐	☐	☐	☐	☐
7.	Align my teaching to the state's curriculum and performance standards in reading.	☐	☐	☐	☐	☐	☐
8.	Align their teaching to the state's curriculum and performance standards in mathematics.	☐	☐	☐	☐	☐	☐
9.	Use technologies more effectively.	☐	☐	☐	☐	☐	☐

	In the past year, I have received professional development support designed to help me:	DID NOT OCCUR	NOT USEFUL	MINIMALLY USEFUL	SOMEWHAT USEFUL	VERY USEFUL	EXTREMELY USEFUL
10.	Use a broader range of assessment tools.	☐	☐	☐	☐	☐	☐
11.	Use teaching methods that can be applied across subjects, such as cooperative learning.	☐	☐	☐	☐	☐	☐
12.	Address the needs of students with disabilities.	☐	☐	☐	☐	☐	☐
13.	Address the needs of English Language Learner (ELL) students.	☐	☐	☐	☐	☐	☐
14.	Prepare students for standardized testing.	☐	☐	☐	☐	☐	☐

C MENTORING SUPPORT

Part B. The State of Utah requires that a mentor teacher should be assigned to all first-year teachers employed in Utah. Please indicate how helpful your mentor was in each area. If this type of mentoring did not occur, please mark "Did not occur" box and skip to the next item.

	My mentor...	DID NOT OCCUR	NOT HELPFUL	MINIMALLY HELPFUL	SOMEWHAT HELPFUL	VERY HELPFUL	EXTREMELY HELPFUL
1.	worked to improve my self-efficacy.	☐	☐	☐	☐	☐	☐
2.	modeled effective techniques for classroom management.	☐	☐	☐	☐	☐	☐
3.	encouraged making self-assessment of teaching practices.	☐	☐	☐	☐	☐	☐
4.	gave formal or informal feedback about teaching methods.	☐	☐	☐	☐	☐	☐
5.	modeled communication and collaboration with colleagues.	☐	☐	☐	☐	☐	☐
6.	encouraged me during periods of self-doubt.	☐	☐	☐	☐	☐	☐
7.	modeled effective techniques of instruction.	☐	☐	☐	☐	☐	☐
8.	helped me work toward my own solutions.	☐	☐	☐	☐	☐	☐
9.	gave informal feedback about classroom management.	☐	☐	☐	☐	☐	☐
10.	provided a link or bridge to existing school culture.	☐	☐	☐	☐	☐	☐
11.	was a good listener.	☐	☐	☐	☐	☐	☐
12.	assisted with teaching content and planning units.	☐	☐	☐	☐	☐	☐
13.	modeled reflective teaching by examining and questioning teaching practices	☐	☐	☐	☐	☐	☐
14.	gave informal feedback about planning and knowledge of content.	☐	☐	☐	☐	☐	☐
15.	modeled professional behavior when communicating with parents.	☐	☐	☐	☐	☐	☐

D DEMOGRAPHIC INFORMATION

1. Last 4 Digits of My SSN:				

2. Month of Birth:

3. My university/college (teacher preparation program):	
BYU	☐
Dixie	☐
SUU	☐
U of U	☐
USU	☐
UVSC	☐
Weber State	☐
Western Governors Univ.	☐
Westminster	☐
University of Phoenix	☐
Alternative Route to License (ARL)	☐
Other_____	☐

4. Year of teacher preparation program completion:	
2006	☐
2007	☐
2008	☐
2009	☐

5. What grade do you currently teach?_____

☐ K ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ Other_____

6. If you are in your second or third year teaching, is this the grade you taught last year?

☐ Yes ☐ No ☐ Not Applicable

7. How large is the class (or average class) you teach this year?_____

8. Select the categories that most closely match the areas in which you are licensed to teach or have an endorsement (Mark ALL that apply):

☐ Early Childhood (K-3) Licensure
☐ Elementary (1-8) Licensure
☐ Special Education (K-12) Licensure
☐ ESL Endorsement
☐ Middle-level Endorsement
☐ Mathematics Endorsement
☐ Reading, Language Arts, Literacy Endorsement
☐ Early Childhood Endorsement
☐ Gifted and Talented Endorsement
☐ Other (please specify) _____

VITA

SARAH KARTCHNER CLARK
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North Logan, UT 84341
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Educational Background

Utah State University, Logan, Utah, 2009
PhD, Curriculum and Instruction: Literacy and Teacher Education

University of Arizona, Tucson, Arizona, 1991
Master of Arts in Education: Language, Reading, and Culture

University of Arizona, Tucson, Arizona, 1990
Bachelor of Arts: Elementary Education, Minor in Spanish

Teaching Experiences

School of Teacher Education and Leadership, Emma Eccles Jones College of Education and Human Services, Utah State University, Logan, Utah, *Teaching/Research Assistant*, Spring 2006 – Present

Instructor:

- ELED 1010: Introduction to Education (3 credits) - Spring 2006 & Fall 2006 (Teaching evaluation average 5.8/6.0)
- ELED 4040: Instructing Struggling Readers - Level 3: Reading Methods (3 credits) - Fall 2007, Spring 2008, Fall 2008, Spring 2009 (Teaching evaluation average 5.6/6.0)

Supervisor:

- ELED 7120: Supervisor of Student Teachers - Spring 2007, Spring 2009
- ELED 4040: Supervisor of Practicum Students - Level 3; Fall 2007, Spring 2008, Fall 2008, Spring 2009

Kingman Unified School District, Kingman, Arizona
Classroom Teacher, Kindergarten: Hualapai Elementary School
August 2001 – May 2002

Catalina Foothills School District, Tucson, Arizona

Classroom Teacher, Fifth Grade: Canyon View Elementary School
August 1990 - June 1995

Tucson Unified School District, Tucson, Arizona
Substitute Teacher, Grades K-8
May 1990 – June 1990

Research Experiences

Research Assistant, Utah State University: Member of multi-university research team examining the preparation and efficacy of preservice and novice teachers in the state of Utah, as well as the influence of these novice teachers on student achievement in reading and math using value-added assessment.
Spring 2006 – Present

Field Researcher, Utah State University: Trained to use the LIKS Observation Form and served as an observer of reading teachers for the IES teacher knowledge grant.
August-October, 2008

Research Assistant, Utah State University: Assisting Dr. Parker Fawson on research study analyzing how reading teachers prepare and structure reading lessons to assist students in understanding the demands presented with differing text types.
Fall 2008- present

Publishing/Editorial Experiences

Pearson Education, New Jersey
Freelance Editor
September 2007 – Present

Tighe Publishing Co., New Jersey
Freelance Editor
September 2007 – Present

Teacher Created Materials, Inc., California
Author, Curriculum Development
January 1996 – Spring 2006

Shell Educational Publishing Co., California
Author, Curriculum Development
January 2004 – Spring 2006

Refereed Journal Articles

Clark, S. (in preparation) The plight of the novice teacher. *Teacher Educator*.

Clark, S. (in preparation) Building and maintaining teacher efficacy and confidence: What Teacher preparation programs can do. *Journal of Teacher Education*.

Curriculum Books/Publications

Clark, S. K., (2007). *Primary Source Readers: Doctors Then and Now*. Teacher Created Materials, Inc.

Clark, S. K., (2007). *Primary Source Readers: Nurses Then and Now*. Teacher Created Materials, Inc.

Clark, S. K., (2006). *Writing Strategies for Social Studies*. Shell Educational Publishing, Inc.

Clark, S. K., (2006). *Writing Strategies for Science*. Shell Educational Publishing, Inc.

Clark, S. K., (2006). *Writing Preparation for the SAT*. Shell Educational Publishing, Inc.

Clark, S. K., (2006). *Writing Preparation for the SAT*. Shell Educational Publishing, Inc.

Clark, S. K., et. al., (2005). *Successful Strategies for Reading in the Content Area, Grades 1-2*. Teacher Created Materials, Inc.

Clark, S. K., et. al., (2005). *Successful Strategies for Reading in the Content Area, Grades 3-5*. Teacher Created Materials, Inc.

Clark, S. K., et. al., (2005). *Successful Strategies for Reading in the Content Area, Secondary*. Teacher Created Materials, Inc.

Clark, S. K., (2005). *Building Fluency through Reader's Theater: Grades 5-8*. Teacher Created Materials, Inc.

Clark, S. K., (2005). *Building Fluency through Reader's Theater: Believe and Achieve, Grades 2-3*. Teacher Created Materials, Inc.

Clark, S. K., (2005). *Building Fluency through Reader's Theater: Believe and Achieve, Grades 2-3*. Teacher Created Materials, Inc.

Clark, S. K., (2004). *Writing Workshop*. Teacher Created Materials, Inc.

Clark, S. K., (2004). *Beginning Writing*. Teacher Created Materials, Inc.

Clark, S. K., (2004). *The Olympic Experience in Your School: Grades 4-6 (United States Olympic Committee Curriculum Series*.) Teacher Created Materials, Inc.

Clark, S. K., (2003). *A Year of Themes: Language Arts*. Teacher Created Materials, Inc.

Clark, S. K., (2003). *A Year of Themes: Mathematics*. Teacher Created Materials, Inc.

Clark, S. K., (2003). *A Year of Themes: Science and Social Studies*. Teacher Created Materials, Inc.

Clark, S. K., (2003). *World Almanac Brain Teasers – U.S., Space, Animals: Grades 3 & 4*. Teacher Created Materials, Inc.

Clark, S. K., (2002). *Practice Makes Perfect: Parts of Speech, Nouns, Adjectives, Grades 1-2*. Teacher Created Materials, Inc.

Clark, S. K., (2002). *Comprehension and Critical Thinking, Level 2*. Teacher Created Materials, Inc.

Clark, S. K., (2002). *Comprehension and Critical Thinking, Level 5*. Teacher Created Materials, Inc.

Clark, S. K., (2002). *Comprehension and Critical Thinking, Level 6.* Teacher Created Materials, Inc.

Clark, S. K., (2002). *A Guide for Using A Year Down Yonder in the Classroom*. Teacher Created Materials, Inc.

Clark, S. K., (2002). *Parts of Speech: Grades 3 & 4*. Teacher Created Materials, Inc.

Clark, S. K., (2002). *Parts of Speech: Nouns, Verbs, Adjectives for Grades 2-3*. Teacher Created Materials, Inc.

Clark, S. K., (2002). *Bears: A Thematic Unit*. Teacher Created Materials, Inc.

Clark, S. K., (2001). *Story Writing*. Teacher Created Materials, Inc.

Clark, S. K., (2001). *A Guide for Using Bud, Not Buddy*. Teacher Created Materials, Inc.

Clark, S. K., (2000). *Gift of the Magi and other Stories. A Teacher's Guide*. Teacher Created Materials, Inc.

Clark, S. K., (2000). *Report Writing*. Teacher Created Materials, Inc.

Clark, S. K., (1999). *The Depression: A Thematic Unit*. Teacher Created Materials, Inc.

Clark, S. K., (1999). *A Guide for using Out of the Dust in the Classroom*. Teacher Created Materials, Inc.

Clark, S. K., (1999). *How to Improve Your Vocabulary*. Teacher Created Materials, Inc.

Clark, S. K., (1998). *Silkworms and Mealworms*. Teacher Created Materials, Inc.

Clark, S. K., (1997). *World War I*. Teacher Created Materials, Inc.

Awards/Honors

2007 Graduate Assistant of the Year Award
Emma Eccles Jones College of Education and Human Services
Department of Elementary Education, Utah State University

2009 Research Assistant of the Year Award
Emma Eccles Jones College of Education and Human Services
Department of Elementary Education, Utah State University

Presentations

Utah Council of the Deans
Monthly Meeting, May 2009
"A Comparative Analysis of Elementary Education Preservice and Novice Teachers' Perceptions of Preparedness and Teacher Efficacy"

Utah Council International Reading Association
Annual Conference, Salt Lake City, Utah, November 2008

"Seeing is Believing: Meaningful and Effective Feedback for Reading Teachers"

National Staff Development Council
Annual Summer Conference, Orlando, Florida, July 2008
"Capturing the Image of Great Teaching"

Utah Association of Teacher Educators
Annual Conference, Salt Lake City, Utah, April 2008
"Another Use for CLASS: Meaningful and Effective Feedback for Student Teachers"

Utah Council of the Deans
Monthly Meeting, January 2008
"Preservice and Novice Teachers in Utah: First Year Data Presentation"

National Association of Teacher Educators
Annual Summer Conference, Milwaukee, Wisconsin, July 2007
"Righting What's Wrong with the Student Teaching Process"

Grants

Travel Grant Award
Utah State University, May 2008
Award Recipient in the amount of $350

Professional Memberships

American Education Research Association, Member
Association of Teacher Educators, Member
Association for Supervision and Curriculum Development, Member
Association of Literacy Educators and Researchers, Member
International Reading Association, Member
Utah Council of International Reading Association, Member

Service

Department Representative, Graduate Student Senate
Elementary Education Department, Utah State University
School Year 2007-2008, 2008-2009

Volunteer, Books for Babies – Improving Literacy from the Beginning
Logan Regional Hospital, Logan, Utah and Mohave County Library, Kingman, Arizona. (Distribute packets of literacy information, library cards, and children's literature books to new mothers in the hospital. The purpose is to teach new mothers the importance of oral language and literacy for their baby.)

Co-Chair, Hualapai Parent/Volunteer Association Board
Hualapai Elementary School, Kingman, Arizona
January 2002 – May 2005

Member, Hualapai Parent/Volunteer Association Board
Hualapai Elementary School, Kingman, Arizona
January 1999 – January 2002

Volunteer - Classroom Reading Tutor
Hualapai Elementary School, Kingman, Arizona
August 1998 – May 2004

Volunteer – Reading Tutor
Reading Clinic – University of Arizona, Tucson, Arizona
August 1988 – May 1989